

THE PEERLESS WAY

**A Book of Instruction
on Practical Poultry-
Raising and Marketing
by Methods That Have
Proven Successful.**



**PUBLISHED BY
LEE MANUFACTURING COMPANY
LIMITED**

PEMBROKE

ONTARIO

CANADA

**ORIGINATORS OF THE PEERLESS WAY OF PRACTICAL
POULTRYING**

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Head Office, corner Pembroke & John Streets, Pembroke, Ont.

**DEDICATED TO THE BET-
TERMENT OF CONDITIONS
IN CANADIAN POULTRYING**

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CONSCIENTIOUS study, augmented by years of actual experience in Canadian practical poultry work, has given the editors of this book a deep insight and an accurate knowledge of actual conditions in regard to the important branch of Agriculture discussed by them in the following pages. As officers of the organization which originated the Peerless Way of poultry raising, and considering the gratifying success with which the patrons of that system throughout the Dominion have met, the hope is surely warranted that **THE PEERLESS WAY**, in the form here presented, will prove itself an authoritative and reliable guide to Canadian poultry raisers, and its publication therefore justified, at least in part.

INTRODUCTION.

TO persons interested in poultry, to prospective members of the industry, and to poultrymen already actively engaged in the business, this book is committed. Its contents deal with poultry conditions as they are found in Canada; the manual is essentially Canadian.

In placing it before the public we offer no apology, believing that the treatise will fill a want that has long been noticeable. Heretofore there has been no one poultry text book which could be adopted as practical.

A vivid imagination, combined with the ability to write, is responsible for the publication of a number of poultry books and articles. Dealing as they do, almost entirely with theories, many of which are exploded before the book is actually dry from the press, is it any wonder that those who have allowed themselves to be guided thereby should have met with disastrous results?

It shall be our aim in the following pages to lead back the student into safe paths—paths well trodden and made sure in the school of experience. The object shall not be to construct a new and original system of poultry raising, but to place before the reader our views, based on careful observation of actual results obtained, and in a form that anyone so desiring may test, develop, and apply, to the solution of any poultry problem that comes before him.

In writing this volume we have chiefly in view the requirements of two classes of readers—those who are already raising poultry on a moderate scale, as a side line to farming, and those who are embarking in the business as

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their principal means of livelihood; and, as we look back on our own modest start in poultry raising and recall the numerous ups and downs before our plant was brought to its present magnitude and efficiency, we believe we can approach the subject in a spirit that will give a reasonable claim on the sympathy and interest of our readers.



THE PEERLESS WAY

CHAPTER I.

ABOUT OURSELVES.

THE PLANT OF THE POULTRY YARDS OF CANADA,
LIMITED, PEMBROKE, ONT.

WHILE the task of setting forth the methods which have been adopted on our plant in raising poultry profitably is not a difficult one, but rather a work which is gratifying, because of the realization that its publicity will result in benefit to our thousands of confreres and thousands of prospective friends in poultrydom, yet we believe that the matter under the heading of the present chapter, "About Ourselves," is something that should be left to an independent pen. Our endeavor has been to put into practical shape ideas that we felt sure would redound to the benefit of the industry, ever confident of its possibilities, in this progressive country. With a view to ascertaining what our ideas were and how far they had been successfully and profitably carried out, the Agricultural Editor of the Central Canada Citizen, Ottawa, on his own initiative, made a close and independent inspection of our plant. The result of his visit he wrote up shortly afterwards in his paper as follows:—

The Poultry Yards of Canada, Ltd., is looked upon as the largest and most efficiently equipped poultry plant in the Dominion. For completeness, extensiveness of operations, and

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excellence of the products, it stands unexcelled and premier. At the same time there is a most complete utilization of every means to place poultry-raising in the sphere of a profitable and remunerative business. And in this the directors of the concern have been thoroughly successful.

GENERAL VIEW OF THE PLANT.

The Poultry Yards of Canada, Ltd., has an admirable situation for such an industry, owing to its proximity to Montreal and the Dominion capital. The poultry plant proper comprises an area of twelve acres of land and is divided into two almost equal portions by a small ramification, the Pembroke spur of the Grand Trunk Railway, as the accompanying illustration clearly exhibits. On the one side of the railway track there are three large spacious buildings—one for fattening fowls, the other a breeding house, and the third for plucking and dressing poultry—whilst across the track is another long building used expressly for breeding purposes, and near this are the colony houses for the summer housing of the fowl. At the front is a brick residence, twenty by forty feet, for the superintendent. Beyond this again are two other brick buildings, the cold storage and a warehouse. Both are pretentious and clearly show the effort the proprietors have put forth to produce a plant, not only fully equipped with all modern conveniences, but likewise of a prepossessing appearance.

THE BUILDINGS.

The buildings wherein the fowl are kept are frame structures, the studding being boarded inside and out and the outside covered with

A B O U T O U R S E L V E S



General view of Poultry Yards of Canada, Ltd., Plant

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painted metallic shingles. The fattening house is twenty-four by a hundred and fourteen feet, and the killing and plucking room twenty by fifty-six feet, with a fine incubator cellar, twenty by seventy-six feet, underneath. The breeding house in this group is twenty feet by one hundred and forty, and is subdivided into pens of twenty by sixteen feet, accommodating altogether forty hens and four cockerels in a pen. In this building trap-nests are used exclusively. The other breeding house is smaller, each pen being only ten by sixteen feet, containing twenty-five hens and two cockerels. The pens may be reached by a four-foot alley running the entire length of each building. The floor is made of concrete, and on this is scattered a litter of straw to the depth of about eight inches. The ceiling consists of straw to the thickness of two feet, secured by slats. This straw serves the important purpose of absorbing moisture and incidentally all putrid, unwholesome gases that might be produced, thus enhancing salubrity and securing the health of the birds. Light enters through a window four feet square facing the south, and ventilation is obtained through two apertures covered by canvas over and above the window. This is an excellent system, since it obviates draught, at the same time permitting of a perfect circulation of air. At the north end of the pen are the roosts, dropping board, and nests beneath them. A hinged curtain, which can be made to enclose the roosts, affords admirable protection to the fowl at night during the severely cold weather of winter. To the left of the roosts in each pen there is a small enclosure provided for the confinement of the male birds. Water is supplied from an automatic drinking fountain, while grit, oyster shell and charcoal

A B O U T O U R S E L V E S

is maintained always before them in a hopper specially divided for that use into three separate compartments. Each pen is provided with a run of a hundred feet by ten, wherein the birds may take exercise. The colony houses, however, which are ten by twelve feet and with a similar arrangement of front and ventilation to the breeding houses, are surrounded by extremely large yards, made to accommodate about five hundred birds in the summer. The soil of these yards is plowed and seeded in the fall. This has the effect of sweetening the soil and preventing staleness.

THE KILLING AND PLUCKING.

It is in the killing and plucking room that the full extent of the firm's operations is realized. Here there are on an average twenty-five people killing and plucking every day from the beginning of August until the end of December. At least three hundred and fifty fowls of all kinds are killed each day. In the killing process bleeding is resorted to, having been found more satisfactory than dislocation. Dry plucking is practised entirely, with excellent results. From the plucking room the birds are taken to the packing room, which is furnished with shapping boards, from which they are taken and neatly packed in paper-lined packing cases. The dressed fowl average about five pounds each.

THE COLD STORAGE PLANT.

The refrigerator house is one of the most perfect in Canada. The cold is produced by artificial refrigeration by means of an ammonia machine. There are four separate cooling rooms, all of these being maintained at different temperatures to suit the nature of the product

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to be stored and the duration of storage. All fowl, however, are first placed in a room held at a temperature from 32 degrees to 35 degrees. Here they are removed to one of the colder rooms, where they may be stored permanently. The total storage capacity of the plant aggregates well over sixty tons.

FATTENING SYSTEM.

During the killing season there are always on hand an average of three thousand fowl of all classes held in the fattening houses until they reach a ripe condition for killing. The farmers supply birds for this purpose, but the fattening process is consummated in the company's pens. The formula of the fattening ration used the company will give to any poultry raiser desiring the information. Three times a day the birds are fed in quantities compatible with their appetite. Half an hour is given them in each instance to consume their feed. After that time the troughs are emptied and cleaned, thus preventing any feed lying before them and fermenting, which is liable to produce grave digestive disorders and ailments.

THE BREEDING STOCK.

The breeding stock is made up entirely of the utility breeds, the Rocks, Orpingtons and Wyandottes being used principally. On an average they maintain about eight hundred breeding hens, and their hatching last spring aggregated the great total of seven thousand chicks. This was accomplished entirely by the Peerless Incubator with most unparalleled success, for by the end of September the mortality therefrom had scarcely reached two hundred and fifty head. Nor was there the least indica-

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tion of white diarrhoea in the flock. Even amongst the matured birds there was not the slightest sign of existent disease. The manager claims that the chief reason for this immunity from disease lies in the fact of feeding them as nearly to wild conditions as possible. In the prosecution of this he feeds the breeding stock no mash whatever, giving the grain to them in the entire kernel. Experience with mash has made him strongly pronounced against its use for breeding birds, since it invariably decreases to a large extent the fertility of the eggs. The basis of the breeding ration is a mixture of two parts of wheat, one of corn, and one of oats. This is scattered amongst the litter upon the floor, thus forcing the birds to scratch for it, with the incidental obtainment of exercise. They are also given a full abundance of grit, charcoal, oyster shells and water. Mangels are fed to them in the raw state twice a week, and they are supplied with beef scraps in a hopper to satisfy their craving for animal food. It should not be forgotten, in concluding this topic, that the breeding stock is entirely pure-bred.

EXTENT OF SALES.

The sales and shipping of the company are of the most extensive order. Of breeding birds alone they shipped during last season over three hundred pens, each of which consisted of eleven females and one male. These are scattered over the entire Dominion, extending from the furthest point in British Columbia to the extreme eastern part of Nova Scotia. Their stock, however, is chiefly sent to Western Canada, for the company directors clearly recognize the vast possibilities of the future in that country for poultry-raising. The shipments

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during the killing season of fattened fowl include over three hundred and fifty per day, yet the company constantly advocates extension, and that is nothing to what it intends to do.

The company deserves the most expressive congratulations for the skilful fashion in which it has established one of the largest and most perfectly organized poultry plants upon the continent. However, when it is known who are the officers and directors of the Poultry Yards of Canada, Ltd., its success can better be understood. The company is composed of acute, enterprising business men, who have prescience to recognize that poultry raising, if scientifically and properly undertaken, can be developed into one of the most lucrative of agricultural industries. The policy of the company is "to breed and possess only the best"—a noble policy, patiently explanatory of its success.

CHAPTER II. CANADA FOR POULTRY.

THIS COUNTRY OFFERS UNEQUALLED OPPORTUNITIES FOR PROFITABLE DEVELOPMENT OF INDUSTRY.

POULTRY raising in Canada is an enterprise offering substantial encouragement and every opportunity for the accumulation of profit. Poultry raising in Canada is a department of agriculture illimitable in its possibilities. Poultry raising in Canada is an industry national in its scope.

Poultry raising is national in that it prospers in every clime and in every latitude of this vast Dominion. Wheat growing is the boast of the West principally; fruit growing is limited to Ontario, Nova Scotia and British Columbia; dairying is practised most extensively only in Central Canada; tobacco growing flourishes in Quebec, but the great Canadian hen flourishes everywhere. Not only in the older Provinces, but on the sunny slopes of the Pacific, in the golden harvest fields of the great West, and in the low temperature of the Yukon, in each and all of these, the joyous cackle of the hen can be heard. Truthfully it may be said that, wherever in Canada man dwells, the hen abides. And, just as sure as two and two make four, the hen is here to stay. Where there were hundreds some years ago there have become thousands, and these have since multiplied to millions. Yet poultry products are in greater demand than ever before, prices uniformly higher and stable. The poultry industry, like every national movement, is working out its destiny, and the time

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will come when it shall receive more prominence than any other.

Poultry raising is a department of agriculture illimitable in its possibilities because its diverse branches afford opportunity for unparalleled extension. Poultry raising is a natural element of farming, and always the farmer will be the natural source of supply for poultry products. The farmer can utilize the waste products of his agriculture in no way so profitably as in poultry raising; he can employ his capital in nothing that will yield him returns so quick and certain. With the application of modern methods, with an intelligent selection of parent stock and an exact understanding of conditions, and to what degree poultry can be made an auxiliary to agriculture, the Canadian yeoman will soon discover that the best crop on the farm is the so-called lowly hen.

If the farmer finds poultry raising profitable, so also shall the specialist—the man or woman who is willing to make of it a distinct business. And for those who wish to engage in poultry raising simply as a healthy outdoor exercise, there is no occupation that offers such absorbing interest as the intelligent and scientific care of the feathered beauties.

To the person who, using his brains and energy, will follow sensible ways, and be guided by the experience of successful poultry raisers, and locate in Canada, the country that offers the best markets and the greatest unsupplied demands for poultry, and poultry products, there is no better opportunity for the accumulation of profit. There is no investment which will give a better dividend.

Prices for dressed poultry have averaged higher and higher, year by year; poultry of

CANADA FOR POULTRY

the finer grades—broilers, soft roasters, fatted capons—bring almost any price that can be



AS IT SHOULD BE!
Becoming Acquainted Early.

reasonably asked; and there is never enough poultry nor eggs to even supply the ordinary

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demand. Our home market for years to come will eagerly consume all the poultry that can be raised, and pay well for it, and the time will be long—too long to calculate—before the product overtakes the demand in fast growing Canada.

When it does we will still have a vast export market in Great Britain, a market which is to-day yearning for a quantity and quality of poultry which other poultry raising centres are not responding to.

Prospects are bright, and there is every indication that the great farming population of this country will respond to the call for the development of the poultry industry in the right manner. Figures in relation to its recent detailed growth and expansion are not available at this writing, but we know that the farms of Canada produced eggs and table poultry to the value of \$16,000,000 in the year of the last census taking. If, as a poultry authority has said, the Canadian hen laid the same average during the present twelve months as she did then, there would be for this year about one hundred and three million dozen eggs which at twenty-five cents would mean a gross revenue of twenty-five and three-quarter million dollars.

But a good honest hen should lay more than seven dozen eggs in twelve months. No class of farm stock will respond so readily to good treatment. Providing she gets this care, and that one dozen more eggs per hen is the result, the increased revenue from the extra dozen eggs would amount to three and one-half million dollars. Give the hen yet a little more selection and care, so that the average yield would be ten dozen, which is by no means large, and the increased revenue would be

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eleven million dollars, or a gross income from the poultry yards of Canada of thirty-six and three-quarter million dollars.

Therefore, we see that there is every reason for the existence of the strongest kind of optimism with reference to the poultry industry of the Dominion. Although theorists will continue to afflict an innocent public with their speculations, although incompetent people will continue to raise poultry in a haphazard manner, and although inferior quality, slovenly packing and indifferent attention to the requirements of the market will detract from the profits of the enterprise, yet the great average, the net final result of the time and money outlay of the Canadian poultry raiser, will in the immediate future be far in excess of any prophecy, however sanguine, that can be faithfully declared.

CHAPTER III.

POULTRY RAISING IN ITS DIFFERENT BRANCHES.

AS a work of agriculture, poultry raising affords opportunity for unequalled extension. This is primarily because its numerous and varied branches, capable of rhythmic combination and unison, are adaptable to almost any locality, either as an individual business of considerable size or as a work secondary to some other upon enlarged or confined limits.

The opportunities which poultry raising offers are always remuneratively interesting, and the labor entailed is not of a strenuous nature, but rather its success may be said to depend on the personal interest devoted to the task.

So far as Canada is concerned especially, conditions could not be more favorable. In a growing country such as our own, poultry raising is bound to be one of the avenues of produce offering real encouragement, to the farmer and the city dweller also. Poultry is the cheapest of all animal foods to grow, and in proportion to the cost of management will bring the largest returns. As a national food the demand for it is increasing with a rapidity most noted, while the development of the supply has only started.

The Canadian farmer ought to take cognizance of the fact, and we would recommend to him the eight reasons given by Professor A. G. Gilbert, Poultry Manager of the Central Experimental Farm, Ottawa, why farmers should take up poultry raising. They are: —

1st. Because the farmer ought, by their means, to convert a great deal of the waste of

POULTRY RAISING AND ITS BRANCHES

his farm into money in the shape of eggs and chickens for market.

2nd. Because, with intelligent management, they ought to be all-year revenue producers, with the exception of perhaps two months during the moulting season.

3rd. Because poultry will yield him a quicker return for the capital invested than any of the other departments of agriculture.

4th. Because the manure from the poultry house will make a valuable fertilizer for use in either vegetable garden or orchard. The birds themselves, if allowed to run in plum or apple orchards, will destroy all injurious insect life.

5th. Because, while cereals and fruit can only be successfully grown in certain sections, poultry can be raised for table use or layers of eggs in all parts of the country.

6th. Because poultry raising is an employment in which the farmer's wife and daughters can engage, and leave him free to attend to other departments.

7th. Because it will bring him the best results in the shape of new-laid eggs during the winter season, when the farmer has the most time on his hands.

8th. Because to start poultry raising on the farm requires little or no capital. By good management poultry can be made, with little cost, a valuable adjunct to the farm.

We might add, that the only capital required will be largely invested in suitable buildings, with occasionable outlays for the procuring of appliances and the introduction of new blood. In fact, many successful flocks have been built up with a minimum of outlay in actual money and the plainest of buildings. So long as one has a definite basis from which to work, it is not then difficult to penetrate the future, and

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with a properly formulated plan set out to mature it.

In the work of poultry raising one can specialize, and as circumstances differ, the farmer or poultryman can choose which especial line will likely bring pleasure and the greatest financial success. Or, we may be growers of poultry generally, going in for turkeys, ducks, geese, together with chickens and eggs, having for stock utility type birds, adapted to different conditions. The market has been created for all manner of products, and it continually



A Ruler in the Poultry Kingdom.

awaits the coming of the producer, responding willingly and promptly to any specialty if the article is high class in quality.

The introduction of incubators and brooders has been to a very great extent responsible for the solidity of the foundation upon which the poultry industry in Canada is building, and the still wider distribution of modern, substantially built and successful machines in recent years is the factor which is giving the industry a won-

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derful impetus to-day. Incubators and brooders made the poultry crop of the United States more gigantic than any other crop in that country; in fact, the annual production of American hens is so high in the hundreds of millions and the statistics so far beyond our usual mental horizon, that it is difficult for the human mind to appreciate them. There is awaiting the same opportunity for expansion in the Dominion of Canada, if those of us who are interested in the subject will try and recognize its importance and keep apace of the splendid possibilities afforded.

We are glad to note that the Federal Government, and the Governments of the different Provinces, are alive to the situation and have felt it their duty to make liberal appropriations towards the study of poultry, to erect plants in connection with the agricultural colleges, to distribute instructive bulletins and advise the farmers' institutes, fairs and all such semi-public gatherings or institutions. The Government of the United States realized the condition of affairs ten years ago and took up the question, and the Bureau of Animal Industry began regularly to issue valuable bulletins for free distribution, giving detailed instruction and advice for use in the production of an increased amount of better poultry and the obtaining of a larger egg yield per hen.

Here and there poultry organizations are growing up, notably the most recently formed of these known as the Poultry Yards of Canada, Limited, Co-operative Circles, the object of which association is, as should be the object of similar organizations, to encourage a co-operative spirit among poultry producers; to bring producers and consumers together; to encourage the adoption of the best breeds and

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types of utility poultry; to encourage the small producers to form local branches, or circles, for mutual assistance and co-operation in selling; to aid in establishing a uniform and recognized standard of dressed poultry and eggs; to keep the producers in touch with those buyers who put a premium on quality; to do everything possible to promote good fellowship among poultrymen; and finally to advance and dignify the poultry industry.

The poultry and agricultural press can do much, but to make their work effective, to make their labor show results, it will be necessary for them to give more thought, more time and more legitimate 'educative talk about utility type stock—the farmers' birds. The fancier is in a class that is small, and one that will never form an important reckoning in the dollars and cents column of the industry's national development. True, we owe the fancier a mead of well deserved praise. He is doing a necessary work, and appreciation is due, but at the same time he is one who can better take care of himself than can the small poultry raiser or general farmer who is making poultry a side line, and who after all, is the real backbone of the industry from a national dollars and cents standpoint. It is towards the latter that the helping hand of encouragement should be extended; it is to him that words of advice and instruction must be offered.

And, at Canadian poultry fairs better would it be for the industry on the whole if more prizes and bigger premiums were offered for the showing of utility type stock, thus stimulating interest and endeavoring to raise the ideal of the ordinary poultry farmer. We believe in strengthening those places where the aid will do the most good, remembering always

POULTRY RAISING AND ITS BRANCHES

than a chain is no stronger than its weakest link. If hardy and vigorous birds, standard bred, are to be found throughout the length and breadth of the land, the farmers must have an ideal, and by means of competition be encouraged in living up to it.

By such methods as above suggested, the poultry industry, in its different branches, will be surely and properly developed, and take its place with greater and still greater prominence among the living factors which are helping us make this country one of achievement and wealth.

CHAPTER IV.

LOCATION OF THE POULTRY HOUSE.

TO commence at the beginning, the selection of a site for the poultry house, and preparation of the yard, should receive careful consideration because the good health of the flock, and their efficiency in egg production, are dependent to a great extent on these factors. The day has gone by when any old thing was good enough for the hen. True, a few years ago it was believed that fowl could adapt themselves to any location, and prosper under any conditions, no matter how wretched, but thoughtful poultrymen, turning their attention to this question, soon discovered that one essential to success was the securing of ample range ground and the erection of suitable houses. The result has been a very great gain in the health and vigor of our Canadian stock, and decidedly better achievements in poultry raising.

Land slightly elevated, and gently sloping southward, makes an ideal situation, more especially if the soil is of dry, porous nature. The providing of a generous quantity of shade and sunshine must be considered also, because in winter weather the fowl like to pass the entire day in sunlight, and during the hot summer there is nothing they appreciate more than shade. Proximity to other buildings, and convenience of attendant, are sufficiently important to demand earnest attention in planning the location of the poultry house and yard.

Of course we realize that the situation ideal is not at the disposal of every prospective poultry raiser—indeed, it may not be within his

LOCATION OF THE POULTRY HOUSE

reach. Conditions differ for various reasons, and conditions must be accepted as we find them. Yet there is no situation so unfavorable that it cannot be transferred into, if not an ideal, at least a suitable one. If the soil is heavy and damp, thorough underdraining will absorb the moisture. Placing the runway on the south side of the house will insure plenty of sunshine, so necessary to the maintaining of a high standard of vigor. A few foliage trees planted along one side of the yard will furnish



One Essential to Success is Ample Range Ground, Good Location, and Suitable Houses.

shade, and we might add in this regard, that keeping the soil loose about the trunk of the trees affords opportunity to the birds for exercise and dust baths, while the insects, which are certain to be attracted to the trees, furnish a wholesome change of diet.

At all times the yard should be kept in a thoroughly sanitary condition. Never allow surface water to settle. Always remember that dampness, and its accompanying agent, filth,

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have had more to do with the ruination of many poultry plants than any other cause. Turn the soil once a year, or where space will permit divide the yard into two or more runs; plough and crop these alternately.

Finally, in the locating of the poultry house, convenience of accessibility is, as before stated, worth planning for. If a separate and special building is to be erected, naturally the most advantageous site should be chosen. But if the intention be to utilize a portion of the barn or shed, the time devoted to calculating which section of either can best adapt itself, in every detail, to transformation into a poultry house, will prove time well spent. Convenience to the birds will prompt the inclination of the attendant to more regularly look after their welfare, and welfare is an all-important item.

CHAPTER V. PEERLESS POULTRY HOUSE AND FIXTURES.

DESCRIPTION OF BUILDING WHICH HAS BEEN USED
WITH SPLENDID RESULTS AT POULTRY YARDS
OF CANADA, LIMITED, PEMBROKE, ONT.

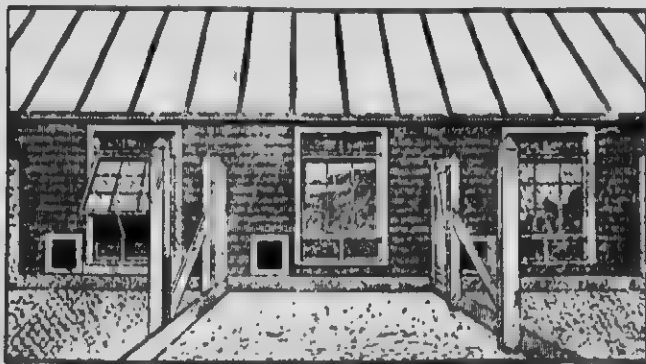
WHEN a location, suitable and satisfactory, has been decided upon, the prospective poultry man should next turn his attention to the construction or erection of a building which will embody all the essentials necessary for the comfort of his birds, and first among these is complete dryness; next, proper ventilation, ample light and plenty of sunshine. Do not be an extremist on any of these points, and do not be governed by the advice of faddists.

When it comes to the discussion of what is the proper style of a poultry house, extremists loudly proclaim most peculiar ideas, and the amateur is often so puzzled by the varied assortment of suggestions offered that he will perhaps sacrifice his chances of success by adopting some of them. Because a certain individual has written an article for a poultry journal and managed to have it headed up in big type, telling of some wondrous invention that will provide the exact temperature required in the hen house, the amateur might think, in reading this, that the plan was really feasible and that the scheme should be incorporated in his new building. Or mayhap the prospective poultry man will come across some plausible yarn, in which a dreamer gives the result of his so-called researches, and loudly proclaims that the erection of a house is not

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necessary at all, and that to place fowl indoors is cruelty to animals.

On the one side may be found the experts who say a requisite to success is the warm bedding. Full stress is laid on the word "warm," and in cold climates the application of artificial heat is urged, besides having the double walls of tongued and grooved lumber, papered inside and out, and the space packed with straw or sawdust; together with double windows and double doors.



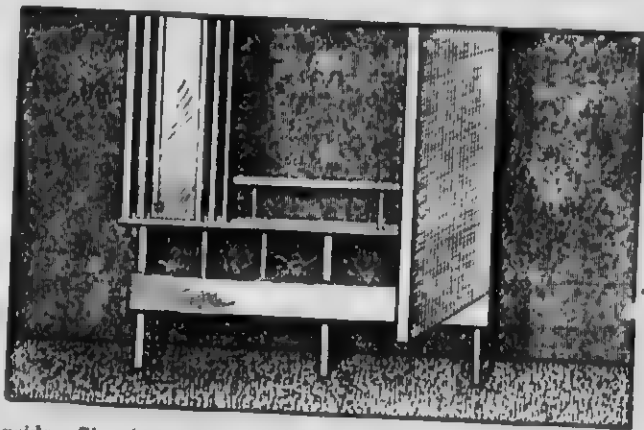
Outside—This Illustration Shows the Door and the Cotton Panels, Above and Below the Window in the Peerless Poultry House.

The other extreme—fresh air—does not lack advocates, nor is the ardor of their advocacy one degree less than those who persist in saying that the air-tight building is the only building in which to properly raise poultry. We have been told that the proper sort of a building for that part of the Canadian climate in which our plant is located is open front, or curtain front, and we have been advised to abandon a house altogether, and simply allow the

PEERLESS POULTRY HOUSE AND FIXTURES

birds to roam at large during the day and roost in the trees at night.

The management of Poultry Yards of Canada, Limited, thought long and well before finally deciding definitely what style and manner of poultry house we would erect, and as a result the building we have is, we feel certain, an essentially good one. With pardonable pride we may tell you that in housing poultry, whether during the long, steady and severe



Inside—Showing Cotton Frame in Front of Roosting Place Held Partly open; also Showing Roosts, Dropping Boards, and Rests.

winter, or in the hot summer, at Pembroke, where a change of temperature of twenty degrees between afternoon and midnight is not unusual, we have been fairly successful—so successful that we would not use any other style of a house than the simple but serviceable one we now describe. This description is offered only by way of suggestion, because there are many poultry raisers who are not in a position to put up a new building, but who,

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once they know the disadvantages of their present premises, may make use of our ideas—proven successful by actual poultry-for-profit experience—to remodel what they have.

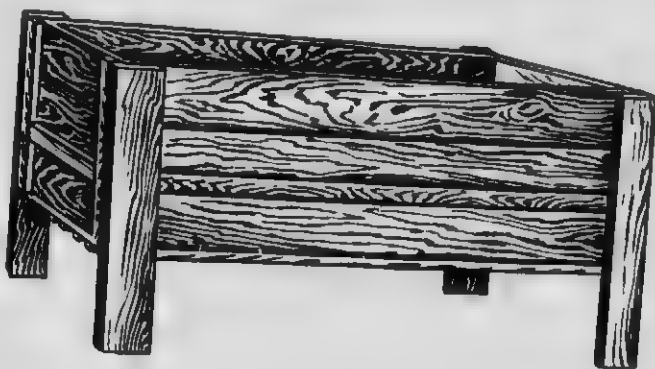
In the construction of this house every thought was centered on having a building embodying features which would rightly fit the conditions under which we wanted to work. The application of artificial heating was not considered at all, because we knew that a heated building was enervating and made fowl tender. The all-open front would not suit a climate such as Pembroke has, where during the winter water will freeze solid in ten minutes—though this method of housing, some believe, is getting back to nature. While we decided to imitate the wild state as closely as possible, yet we did not forget that the present hen is not the product of natural conditions, but that she has been born again, as it were, under new environment. And so, after much planning, the middle course is what we adopted, and we erected a combination open-front, bottled-up building.

This house, which, by the way, we call the Peerless, because of the multiplicity of good points which it has over others, is a frame structure with a double pitch roof. The stud-ding is seven feet high and boarded both inside and out, the exterior being covered with painted metallic shingles as a protection against wind or fire. One hundred feet is the length of the building, and it is twenty feet wide. An alley four feet in width runs the whole length of the north side, and there is a cross wall from the alley partition to the south side every ten feet, thus making the pens 16 x 10 feet. The alley is very convenient, but

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could be dispensed with, more especially in a house having one or a few pens, and if it is desired to keep but a small flock the size of the pen may be reduced accordingly, being sure, however, to leave at least six feet floor space for each bird.

The floor is made of concrete. Bricks laid down or gravel will serve the purpose, but we have used concrete because we think it an ideal floor. Some poultry men claim concrete is cold, but in reality it is only cold to the touch. When covered with litter to a depth



Dusting Box.

of about eight inches concrete makes the warmest kind of a floor, being impervious to all drafts. Then, it has the decided advantage of being easily cleaned; it does not become damp, and is rat and vermin proof.

The ceiling of the pens are slated with four-inch strips placed three inches apart, and above is laid about two feet of straw, which absorbs the moisture and prevents the formation of dampness on the walls. Anything which keeps the walls dry will keep the litter dry, and birds

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will scratch in dry litter if there is anything to scratch for.

In front of the pen, facing the south, is a window four feet square, as shown in illustration, which swings out and upward on hinges. This window is large enough to allow the sun to reach into the whole pen, keeping the fowl



Automatic Drinking Fountain.

contented, and affording them every protection from storms of snow, rain or wind.

Ventilation, that most important feature, is secured by openings covered with cotton, one by four feet, placed respectively above and below the windows. The air passes through these cotton-covered frames without draft, and in

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conjunction with the straw above the slatted ceiling, has been found an admirable arrangement. The fresh air entering is gradually warmed, and the foul air is driven outward, while the moisture is absorbed by the straw, thus furnishing a pure and invigorating atmosphere in a perfectly dry interior.

The enclosure of the pen itself forms the scratching pen, and when unfavorable weather prevents the hens going out, they are here sheltered and afforded ample room, plenty of sunlight and the much desired maximum supply of fresh air.

When Professor Gilbert, of the Central Experimental Farm, first visited our plant, this feature of the poultry house appealed to him very strongly, in fact so favorably impressed was he that he gave a detailed description of it before the Agricultural Committee of the House of Commons.

At the north end of the pens are the roosts, with the droppings board, and nests underneath, as illustrated. The board is three feet wide, and is made of matched lumber, while the roosts themselves, placed twelve inches above, are made of 2 x 4 with trimmed edges. It is very important that the roosts be not placed too high up, because birds, especially of the heavier breeds, in flying down are liable to injure the breast bone, or laying hens to break an egg, often a fatal occurrence. To the left of the roost proper, in each pen, is a small lathed enclosure which holds two male birds. During the breeding season one of these is allowed out one day, and the other the next.

In front of the roosts is a hinged curtain that may be swung shut on cold nights to protect the fowl. By means of this curtain they

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are kept snug and warm, and there is always ample fresh air for them to breathe, this being diffused into the roosting closet through the porous weaving of the curtain material. The animal heat of the fowl keeps the interior of the enclosure thus formed comfortably warm, and if you were present on a cold, frosty morning, when the thermometer was below zero, and saw the way those birds jumped down and went to work scratching in the litter for their breakfast, after the curtain was released, there would be no doubt in your mind that they were in the very best of healthful condition. And it is but natural they should be, having spent



A Practical Roost and Nest Arrangement.

the night in an atmosphere conducive to good health, where they were kept amply warm and supplied pure, dry, fresh air.

The nests are also an item of the furnishing needing some comment, and the simplest description we can give of them is that they are boxes 30 inches long and 12 inches wide. These nests are banked under the roost platform, with a door opening in front, the entrance for the hen being at the rear, where the seclusion is inviting. Plenty of room is given for nesting material, and it is no task to keep them clean and wholesome.

PEERLESS POULTRY HOUSE AND FIXTURES

In passing we might add that trap-nests are used very extensively on our plant, especially in the pens containing the best breeders, and indeed their use is becoming quite general among poultry raisers throughout Canada. Constructed like ordinary nests, trap-nests are divided into two parts, with an entrance in one end and a moveable top. The division only goes up far enough to keep the nesting bed in



Compartment Feed Hopper.

the rear portion. An automatic wire floor is hung in the entrance, which falls as the hen goes inward, the tip of her tail loosening the catch. We have found the trap-nest, as anyone will, advantageous to all the different branches of poultry raising. In fact, it may be termed an indispensable aid to every poultry man. With the assistance of the trap-nest the fancier

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can tell the eggs of which fowl are producing the red ribbon birds, and he can detect the hen that is laying infertile eggs. The poultry man who is seeking to build up a certain strain can, with the assistance of the trap-nest, know exactly what hens to breed from, because he knows the individual laying-qualities of each. By means of the trap-nest the poultry man who wants eggs in large quantities for market can tell which of his hens are laying the most and which are simply consuming feed and laying few eggs.

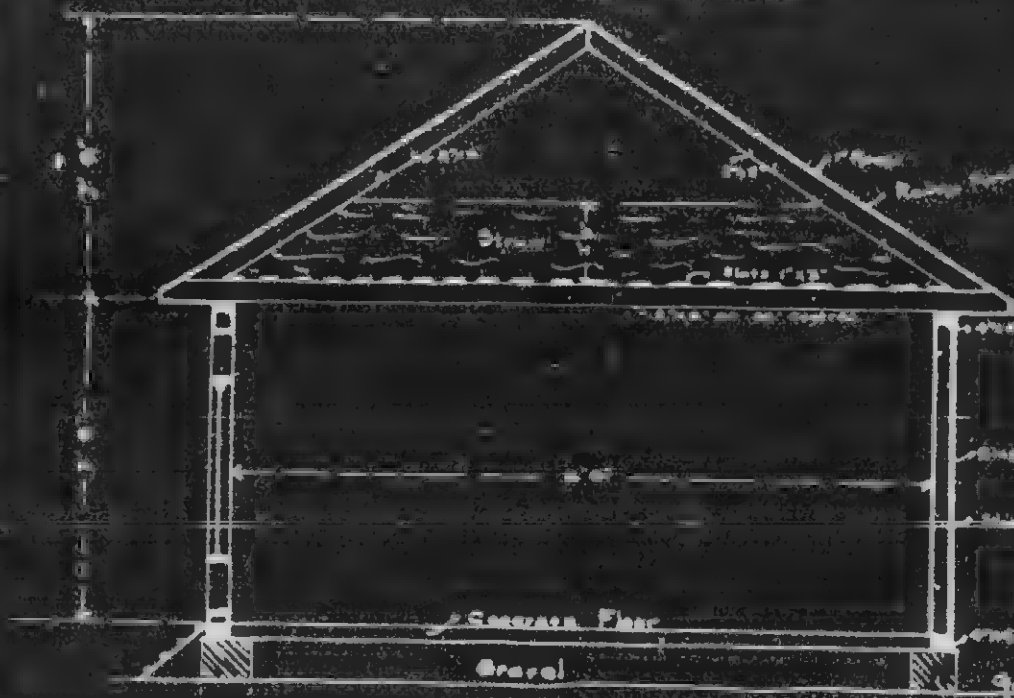
The feed hopper, constructed as illustrated, is divided into three compartments. Hung on the wall at a convenient height, the birds are enabled to feed from it without difficulty. The uses and results of the hopper feeding system are more fully dealt with in another chapter.

Automatic drinking fountains are used, and being placed in the walls between pens, one serves to supply a large number of fowl. From the illustration it will be seen that these fountains are an admirable arrangement for keeping the water clean and free from litter. The required amount is always supplied and the birds cannot spill the contents nor in any way wet their plumage.

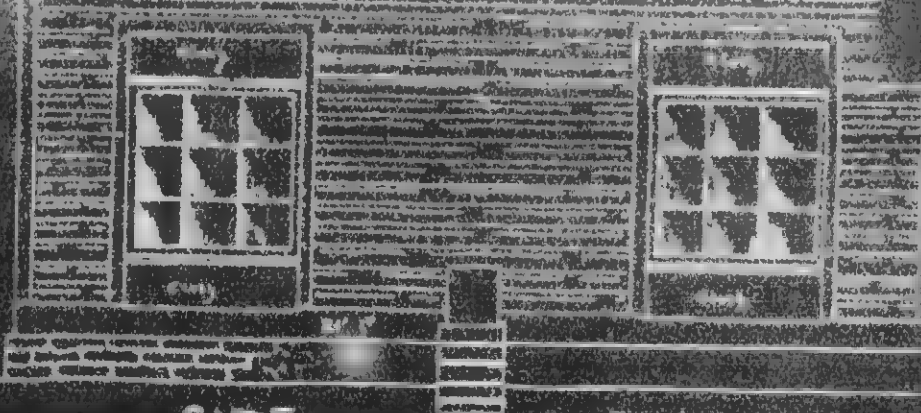
That is our Peerless poultry house. Like the description, the house plan is simple, but the Canadian poultry raiser who adopts its ideas will, we warrant, find it possesses more solid advantages and fewer disadvantages than any other. Compact, yet amply big, the house combines the essentials best suited for all conditions, varied though they are, of poultry raising in this country.



END ELEVATION



SECTION



SIDE ELEVATION

PLAN
OF
MODEL HEN-HOUSE
Scale 1/4" = 1'

SECTION A-B



CHAPTER VI.

PARENT STOCK.

“THE best is none too good.” How often we have heard that pithy saying applied with expressive fitness where the question of selecting material of a first or secondary quality was being considered. And how often, too, we have seen success crown the efforts of the business or enterprise which always maintained its belief in having nothing but the best. The poultry business is no different from any other in this regard; the same rule is applicable, and whether starting in a large or small way, the best is none too good.

By all means the prospective poultryman should purchase nothing but standard bred, vigorous, healthy parent stock, and it behooves the poultry raiser already established, whose flock may have deteriorated, to dispose of the nondescript specimens and retain only good birds. Standard bred layers will produce more eggs than a flock of scrubs, and these eggs will bring a better price. Standard bred poultry are better for table use, and a crate of such birds will bring treble the market returns that a crate of mongrels will.

Whenever we hear of a farmer or other poultry raiser who is dissatisfied with the results he is obtaining on looking over his stock, the reason of the dissatisfaction is at once apparent. You will find a bunch of birds of all sizes, shapes and colors, running free. The eggs are ill-shaped, discolored, or dirty. When sold they do not bring a good price. If used for hatching, one knows not what will be got from

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them. Nothing much could be expected under the circumstances, and generally the result is simply the addition of a few more nondescript specimens to the mongrel family.

Furthermore, look into the method of feeding and housing these poultry that is employed, and one is soon convinced that the birds are under no obligation to their owner. They are left to hunt for their food, roost on the fence or the stable loft, and no fresh water, no meat meal, or no grit is provided. How then could any profit be expected from them?



Standard Bred, Healthy and Vigorous Birds.

To invest in standard bred fowl does not require a large capital, as some might think. With a small outlay any prospective poultry man can procure good stock, provided he exercises discretion in his purchases. Let him communicate with some reputable breeders who have devoted care and attention to the up-building of a strain of utility type, and procure a setting of eggs or a pen of birds from them. There need be no hesitation about sending away

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from home, because when dealing with breeders who have been in the business several years the poultry man can rest assured that he will receive the full worth of his money. We would never advise the practice of simply purchasing a male bird or two of first-class strain, and expect to thereby improve the whole flock. Striving to eliminate multifarious defects, and at the same time intensify the good points, is a difficult task. The evil that years of haphazard breeding has done cannot be eliminated in a short space of time, and it is by far the better policy to start anew with several settings of eggs or with a pen of standard bred birds.

Only a specific line of work has been decided upon, and the attainment of some definite object desired, then the poultryman has really made a beginning. The next point for him to decide is whether he will start with eggs or with stock. There are advantages to be gained by either method, but existing conditions are what should govern. For the person with little experience and a limited capital, undoubtedly the best results will be obtained by purchasing standard bred birds and thus studying the requirements of the bird from the incubator to the market. And we again emphasize the necessity of being certain that the eggs are from standard bred birds.

The investment required is never large. Indeed, we are prompted to ask in what business can a man get a start so cheaply and so quickly? To cite an instance. One farmer in Renfrew County, Ontario, where the Poultry Yards of Canada, Limited, plant is located, purchased a small incubator lot of eggs—white Wyandottes—from our standard bred pens two years ago. The setting hatched eighty-three chicks.

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That was this farmer's real start. To-day his birds sell for two dollars apiece, and at his local Fall Fair, besides carrying off twenty-five dollars in prizes, he sold six cockerels on the grounds at five dollars each. This very same man had been keeping a flock of hens in which every old thing in the way of blood predominated for eleven years. Once he secured eggs from standard bred stock, he found poultry highly profitable.

Standard bred parent stock will insure the production of chicks of the same type. Uniformity must ever be the aim of the successful poultry raiser, and in no more certain manner can this result be achieved than through parent stock that is uniform in size, uniform in shape and uniform in color. The person possessing standard and healthy, vigorous stock of the breeds already established, wishing to introduce new blood, would encounter no difficulty, because all breeders are agreed on the type to which they must breed their birds, which fact in itself is surely a strong argument in favor of the universal adoption of standard bred stock. However, some amateur poultry raisers have a tendency to try and produce what they believe will be good quality birds, by mating a fowl possessing certain good qualities with another which, despite general weakness, may have some good points. The idea that the offspring will bear the good qualities of both is an erroneous one, we have proven to our own satisfaction by numerous experiments. Rather, the poor qualities of both parents are more often seen in the offspring than are the good qualities of either. Therefore the desire for economy, or whatever else prompts this man-

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ner of breeding, is false and detrimental to the interests of the poultry industry.

In the question of breeding there should be one simple rule, i.e., mate only fowl that are full of strength and vigor, and possessing everything necessary for the points you are after—eggs or meat, or both. In the parent stock lies success or failure. If you hatch weak, puny fowl, they will go down from generation to generation. Strength and vigor, on the other hand, will likewise be transmitted through different generations.

Not a few farmers make a very unfortunate mistake in their method of arrangement with reference to poultry. Several whom we knew near the City of Winnipeg were receiving a nice income from dressed fowl, but they informed us that after the third year they found it difficult to keep up the quality of their poultry. This seemed rather strange, so we investigated, and we found that these farmers were selling or killing the good birds and breeding from what was left. In a desire for extra prices they sold even a coopful of the best birds on the farm, and the culls—those that would not look tempting to a purchasing housekeeper—were left to constitute breeding stock for another year. Hence the inevitable result—degeneracy most marked in the quality. Ordinary judgment should tell a person that the **best** birds must be retained and bred from, and if this practise is followed the quality will keep up.

But in order to retain vigor and vitality in the parent stock these must of necessity receive proper care. Confinement in certain conditions will place the stock under a handicap that is hard to overcome. An unhealthy house, a

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house that keeps the birds diseased and droopy, a house in which there is not plenty of sunshine, will certainly lower their vitality. Overcrowding is a cause, not only for lack of vitality, but for lack of production as well. If your hen house will accommodate only twenty-five, then do not place fifty in it. If you do, the weaker ones will suffer, by being picked at and crowded, until in their disgust at failing to get a meal they will fly to the roost and have to be contented with the leavings. Every bird in order to remain healthy and make money for its owner, must receive ample and suitable feed. Surroundings must be clean and wholesome. Under no consideration can filth be countenanced. Birds that roost for ten hours each day over droppings boards that have not been cleaned regularly, cannot be expected to remain vigorous, nor can such stock be fit for a breeding pen. Birds tormented with lice by day and mites by night cannot in justice be expected to produce healthy stock or keep up a profitable egg yield.

In concluding this chapter, then, we can but reaffirm that, to be really successful and make big money from the sale of poultry in Canada, as well as in other countries, the poultryman must first have only birds which are constitutionally strong and vigorous and give these his best care and attention. If these words are being read by any poultry raiser who has been unfortunate and who has often wondered to himself why he never got results from his work, why his chicks died in the shell, why some others hatched out but subsequently drooped and died, why others did not grow, and later on come to laying maturity and then give eggs and lots of them—if any reader has regretfully been

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forced to ask himself any or all of these questions, he will find that at the bottom of his disappointing experience and the cause, in nine cases out of ten, of his poor results, lies in the weak, degenerate and debilitated constitutions of his parent stock. Above all others, cognizance must be taken of the plain and unalterable fact that eggs from weak breeding stock cannot produce strong chicks, and weak chicks cannot grow into strong, vigorous stock.

CHAPTER VII.

FEEDING AND CARE OF PARENT STOCK.

"BY George, look at these birds! Say, they do enjoy that work! And the way they relish the stuff. You certainly should be proud of the flock and your system of feeding when it will produce such results." So spoke the editor of one of Canada's leading agricultural journals on the occasion of his recent visit to the Poultry Yards of Canada, Limited, plant. He is a mature and solid business-like poultry critic, not given to exaggeration, but on this occasion the ecstasy of his delight broke forth. And so should any poultry man feel happy to see breeding birds in a vigorous and healthy condition.

Proper feeding has much to do with this attainment, because it is only by being able to extract proper nourishment from the feed that constitutional strength is kept up, and from the food they consume laying stock draw those ingredients which supply the extra demand required for the production of eggs. The poultry raiser, in feeding, must always remember that Nature has not given hens the power of converting what they eat into an element different from the element the feed actually contains. Hence, an earnest effort must be made to understand what we call the feed-value of foods, else feeding will prove unprofitable and very costly. Proper food will always be made good use of by an honest hen, because she is just as anxious as anyone to do the right thing, and in arranging to furnish the correct essentials it is well to remember that food, to have a

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practical value, must first be sweet and clean, and of a variety that will furnish just the nutriment required to develop whatever particular product may be desired, without the birds having to digest a lot of waste material.

Considering the case of laying hens, a certain part of the ingredients of the egg, for instance, is matter of almost the same nature as is found in lean meat. That is, of course, in a very condensed form. The egg contains other ingredients, condensed also, which are much like bone, milk, etc. They are known as the animal part of the egg. The digestive organs of the fowl are such that she can extract from the grain, meal and milk included in her diet the materials which are required in the forming of the egg.

The same self-evident fact holds good in the extracting from its food the necessary material for the upbuilding of its body. So, if we supply the food in such a manner that it will give the fowl the exact materials in proper form, should we not have good results in the health of our birds, and consequently in the hatching of the eggs, and the growth of the chicks?

In this chapter we are giving several formulas of good rations. The prevailing prices and convenience of procurability will no doubt guide the reader in deciding which will prove the most profitable to use. First, however, we will look into the general merits of the foods most commonly used, so that a better idea may be formed of their relative feeding values.

VEGETABLE FOOD.—In vegetables there is contained a great deal of valuable matter, and being in a palatable form, is much relished by the stock. Grass is good, and if well dried in summer can be fed from racks. It may also

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be steamed or wet with hot water. Mangels, raw, make a most satisfactory winter food. Cabbage comes next, and from either of these excellent results will be obtained.

GRIT AND LIME.—Grit and lime are necessities which keep the digestive organs in tone. From them the hens can extract the materials for the production of the egg shell and feathers. Common gravel makes a good grit, and lime plaster is an excellent substitute for oyster shell.

ANIMAL FOOD.—Fowl require a certain amount of animal food, and this necessity should never be denied them. About one-half ounce of meat every second day, having little fat upon it, is the correct quantity. Green ground bone is a commendable food and may be fed in almost the same quantity. Dry commercial bone, though lacking some of the constituents of green bone, may be used with good effect. It is generally fed in hoppers, allowing the birds to take what they will.

GRAINS.—Among the grain foods, corn, if Canadian grown, is an excessive fat producer, but being coarse, has this drawback—fowl when eating it whole become filled up with very little effort. Therefore, the better way to feed corn is in the cracked or meal form.

Peas, also fattening, are even coarser, and make an undesirable impression upon the flesh very noticeable after the bird is cooked. That dry, stringy appearance which condemns even plump carcasses, is generally the result of feeding peas.

Oats are in a class by themselves, and if procurable in the hulled state, make satisfying and result-producing food. Of course, unless

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hulled, or fed in the form of meal, oats are not nearly so satisfactory.

Wheat makes a splendid grain food, and while it is fattening, is much safer than corn. It will not make the birds heavy. Good quality wheat can be procured at a moderate price in almost every locality, hence it is a food which is commonly used. If supplemented by skimmed or butter milk the proportion of protein is materially increased.

A grain having nearly the same value as



A Runway of Standard Bred Poultry.

wheat is buckwheat, but, like oats, the excessive amount of hull makes the feeding of it objectionable. Its use has never become popular in this country because feeding buckwheat has a tendency to cause light-colored yolks in the eggs, and yolks, unless possessing a normal color, condemn the egg of the poultry raiser's birds whence they come.

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Barley is similar to oats, only having less hull. It should be fed carefully, as an over-supply is likely to cause bowel trouble.

In the feeding of grains there is offered a splendid opportunity to provide the fowl the proper amount of exercise so necessary to the good health and vigor of breeding stock. By throwing the whole grain into deep litter, which, of course, should be always clean and dry, the birds must hunt and scratch to obtain the kernels, and apparently they enjoy the work. It is a diversion, keeps them warm in cold weather, and always conditioned.

Mash feeding is a mixing of the ground grains together and fed wet. Such a ration is easily digested, but if fed excessively is fattening, and for that reason its use for the upkeep of breeding stock is objectionable. Our experience has been that hot mashes should never be given to the breeding stock, and especially is this phase of our experiments applicable to the colder portions of Canada. Mash foods are enervating and so weaken the birds that they are not so well able to withstand the rigours of the severe winter. Dry hopper feeding is much to be preferred, that is, placing the ground oats, corn and barley dry in the hopper, allowing the fowl to help themselves. There will be a little waste, but the saving of time in mixing and feeding, and more important still, the better condition of the fowl, offsets any loss there may be.

We are herewith enumerating a few of the food rations which will always be found reliable:—

Ration No. 1.—Wheat in the morning scattered in the litter; a mangel, or a piece of cabbage-head fed raw. In the afternoon oats or

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barley together, or oats one day and barley the next, with an allowance of ground green bone, meat or meat meal in either case. Hopper feeding of ground oats one part, shorts one part, cornmeal one-half part.

Ration No. 2.—Cracked corn with green food on the morning of every second day, with a hopper feed of oats, barley and bran in equal parts. Ground commercial bone in the hopper is a good addition.

Ration No. 3.—Breakfast of buckwheat and cracked corn, with a mangel or other form of green food every second day. The noon hopper feed to consist of oats and shorts, equal parts. At night feed wheat. When using this ration meat of some description should be furnished three times a week.

The allowance of grain for each bird per meal is about one handful, and when scattered in the litter they are all enabled to obtain a share. Those who can attend to their stock but once a day will find it a good plan to put the grain in litter at night, burying deep. Make certain that the hopper is full and that the fountain is always supplied with fresh water. The animal part of the ration should be placed on a clean part of the floor, or, better still, hung on the wall a few inches up.

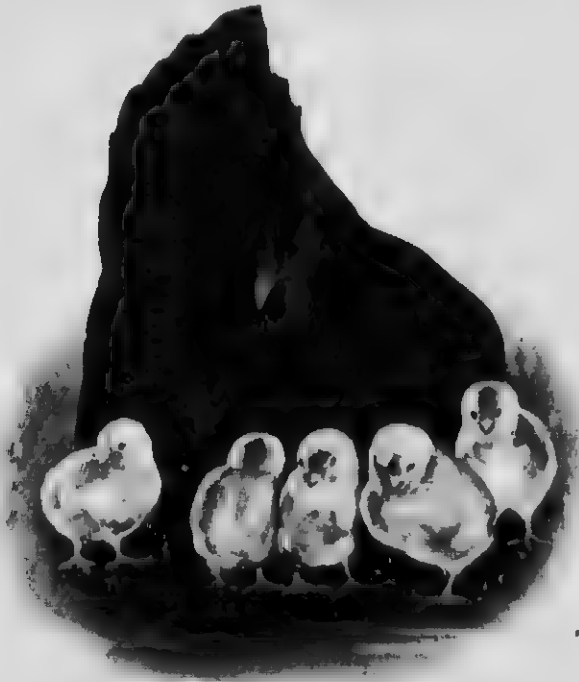
If poultry raisers will keep in mind the two-fold purpose, as before enumerated, for which food is given, and also the fact that quantity and quality act most markedly on the result, they will then be in a better position to judge of the time and the amount required for the proper maintenance, good health and vigor of their parent stock.

CHAPTER VIII.

HATCHING.

NATURAL INCUBATION.

NATURE placed in the hen an instinct prompting her to the task of hatching, and thereby propagating the species. Until the invention of the incubator the hen performed her work



A Mother Hen and Youngsters.

with credit to herself, and she was faithful in her endeavor; she was also successful to a limited extent. That is, the hen brought forth

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chickens, just as she will to-day, if really in the correct humor, but poultry on a large scale, would never, and will never, be practicable, if the hen is relied upon to do the hatching, or the brooding either.

The hen's real business is that of egg laying, and experience has proven beyond the shadow of a doubt, that when the hen is busying herself at hatching her owner is not deriving the profit he should from his bird.

Using a hen for hatching necessarily limits this important branch of poultry operations besides reducing the profitable production of eggs.

Natural incubation, or as it is termed, hatching by the hen method, is however, rapidly and surely being abandoned. Even the fanciers to-day, or at least the majority of them, depend on the incubator to produce exhibition prize stock. This is so because fanciers understand conditions.

ARTIFICIAL INCUBATION.

Intelligent poultrymen generally, and poultry educationalists recognize the incubator as an invention that has done wonders for the poultry industry. In fact it would be hard to imagine how poultry raising could have made the immense strides which it has during the last decade without the assistance of artificial incubation. Its many advantages over the natural method of hatching, are apparent to anyone who desires to raise poultry in quantities, and to have them hatched early enough in the season to command the most favorable market prices, and to those, making a speciality of egg production, the incubator affords

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the means of hatching early pullets, the kind that produce a full egg basket, in the fall and winter months, when eggs bring fancy prices. Since artificial incubation bears such an important relation to the poultry industry, it is desirable that those interested should understand its essential principles, for, with a reasonable knowledge of the subject, and of the



Incubator, 200 Hens Eggs Capacity.

prevailing conditions that should obtain during incubation, a more intelligent and successful operation of the incubator will be assured.

Incubation, in so far as it relates to the subject matter of this work, may be defined as the maturing of the living germ, resulting, af-

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ter a determinate period, in the exclusion from the shell, of a fully developed chicken.

Artificial incubation is the application, in mechanical form, of the efficient factors, that are present in natural incubation. These factors are heat and ventilation. Successful artificial incubation is contingent upon the efficiency of these factors, combined with an intelligent performance on the part of the operator of important, though accidental services such as turning and airing the eggs and securing, as far as possible, normal conditions in the incubator room.

HATCHABLE EGGS.

The supreme importance, either in natural or artificial incubation of providing properly fertilized eggs, produced by a vigorous parent stock, is such as to demand special treatment, which it has in another part of this work.

An elementary knowledge of the formation of the egg as well as the development of the embryo chick, will assist the student of artificial incubation to more efficiently operate the machine. The external portion or shell consists of a wall, composed of calcareous matter, deposited on the egg during its passage in the oviduct. The shell acts as a protection to the egg and being porous admits of the evaporation of the liquid content of the eggs as well as the interchange of gases which is constantly going on during incubation. Inside the shell and closely allied to its inner surface is a double fibrous covering called the membrane. At the large end of the egg this covering is separated forming a cavity or pocket known as the air cell. In new laid eggs this air space

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is hardly noticeable, but during incubation it becomes more enlarged from day to day as the egg content evaporates. About the nineteenth day the beak of the chick pierces the membrane surrounding the air cell and it is then that the chick commences to breathe through its lungs.

Enveloped in this membrane, is the white or albumen and embedded in the albumen is the yolk containing the germ of the future chick which entered the rudimentary yolk when the sperm passed up the oviduct.

HEAT.

During its passage through the oviduct the development of the germ continues but after the egg is laid it practically stops. By the application of heat a new impetus is given it and the germ at once starts to develop.

Scientific observation of the temperature of the broody hen and of the egg itself containing the living germ, while under natural incubation, along with innumerable experiments with the incubator have demonstrated, that a temperature at the top of the eggs, of approximately 103 degrees Fahrenheit brings the best results, in maturing the germ.

This being so, the importance of a uniform heat in the egg chamber will at once be appreciated. By a uniform temperature, it is not meant that the heat throughout the egg chamber will be the same, but that taking any given level in the egg chamber, such as the top of the eggs, the heat should be uniform at such level in all parts of the egg chamber.

VENTILATION.

As incubation proceeds a membranous sack is developed that gradually increases until

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about the sixteenth day it completely surrounds the contents of the egg. This is the great respiratory organ called the allantois. Its function is to supply oxygen to the embryo chick and at the same time to carry off the waste products in the form of carbon dioxide.

To provide a supply of oxygen and at the same time to remove the carbon dioxide and other gases from the egg chamber, access must be had to the air outside the egg chamber. The remedy by which this is accomplished is ventilation. As the amount of oxygen required, as well as the carbon dioxide given off increases with the development of the chicks, so a



Interior of Incubator, Showing Correct Ventilation System.

system of ventilation should be employed that will insure a proper supply at all times. But besides performing this function ventilation has another important mission. During incubation the evaporation of the egg goes steadily on, and as ventilation must of necessity affect evaporation, the relation that each bears to the other, and to the consequent proper development of the growing germ cannot be overestimated, for it is in the proper control of this evaporation that the success of artificial incubation largely depends. And it must not be overlooked that the moisture produced from

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the evaporation of the egg, as well as that from the condensation arising from the colder air of the incubator room being introduced into the warm egg chamber, is in itself useful, for in conjunction with the carbon dioxide given off by the embryo chick it has the effect of decaying the shell of the egg and thus preparing the way for the easy exclusion of the chick. When through a badly constructed egg chamber or defective ventilation, the evaporation of the egg is too rapid and the moisture is thus wasted the result is usually seen in partially developed chicks or chicks that have apparently grown to maturity, but are too weak to break from the shell.

TURNING AND AIRING THE EGGS.

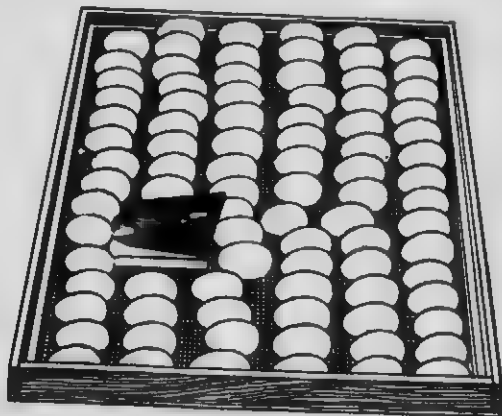
Observation of the setting hen shows that a constant movement of the body is going on, and whether this is done through natural instinct for the welfare of the future chick, or with the object of gaining a more restive position, can not be said, but certain it is that this movement has the effect of turning the eggs or rather of constantly changing their position resulting in a more uniform heating of the egg contents and at the same time preventing the adhesion of the embryo chick to the membrane of the shell. Numerous experiments in artificial incubation has proven the value of this feature and the practice of turning the eggs at least twice a day is confirmed. So also in artificial incubation it has been found beneficial to cool or air the eggs as happens when the setting hen leaves the nest for the purpose of obtaining food.

H A T C H I N G

NORMAL CONDITIONS IN THE INCUBATOR ROOM.

We have seen that it is by means of ventilation that air is supplied to the embryo chick, and that by the same means the egg chamber is cleansed of foul gases. It is at once apparent that the conditions in the room should be such as will insure a supply of pure air.

The ventilation of the room itself, therefore, should be so arranged that the supply of pure air will be ample without causing draughts,



Egg Tray with Thermometer in Position.

or too great a lowering of the temperature of the room.

But ventilation of the egg chamber also affects the evaporation of the egg so the necessity will at once be seen of securing a moderate amount of moisture in the air in the incubator room, otherwise a too rapid evaporation of the egg will result. Ventilation of the incubator room will assist in increasing the humidity, but, if there is not sufficient, sprinkling

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water on the floor or other means should be resorted to, or moisture may be introduced into the egg chamber direct, but it is obvious for many reasons that it is preferable to remedy conditions in the room itself, if this is at all possible.

Then, when a place satisfactory for the running of the incubator has been decided upon attention may be turned to the machine itself, and method of operation.

Take the incubator from the crate, and remove all the parts. Check over the list of fixtures making certain that there is a piece to correspond with each one listed on the check-slip sent with the machine.

Arrange the regulating apparatus as instructed in the book of directions. Next arrange the heating apparatus correctly, as instructed in the book of directions. Fill the boiler with water. When filling the boiler remember that a sufficient supply of water must be poured into it so as to fill the tubes in the egg chamber as well as the exterior tank. Then after the boiler has been filled, it is advisable to draw off one pint at the drain cock.

The lamp may be filled next. Use the best quality oil in lamp, 150 to 175 degree fire test, if you can secure it, and trim wick so it will burn an even flame, and not flare out at the corners. Place the lamp in position and turn up a medium sized flame, and watch it for a while as the flame might increase, and smoke after the burner becomes warm. Do not be in a hurry to heat up the machine; it is more important that you have the lamp flame burning evenly on the start.

Examine the thermometer; see that it has

H A T C H I N G

not been injured, glass not broken, or frame not bent. Hold the thermometer in your hand, bulb end down, and swing it vigorously a couple of times so as to move the mercury column.

Adjust the regulator so that it will hold the heat in the egg chamber at 103 degrees.



Incubator, 120 Hens' Eggs Capacity.

It is most important that the lamp burn steadily. When starting, the lamp flame should be slow. This should be gradually increased until it is about medium size. Never turn the lamp flame up high enough to cause it to smoke. Twice per day—morning and evening—trim the lamp. After filling the bowl with oil, turn the wick up until the charred part is level with the metal top of burner, and trim by simply rubbing a match

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across the wick until the charred part is all removed, giving a good round blaze. Keep the gauze shield on the burner scrupulously clean always. Use a new wick for each hatch.

When putting the eggs into the machine see that they are sitting evenly on the tray. Put the tray in the machine, and have the thermometer set as per manufacturer's directions. The temperature in egg chamber will now drop, but you must not hurriedly interfere with regulator on lamp. The temperature will rise again as soon as the eggs have become warmed. When 103 degrees have been reached, as evidenced by the thermometer, or the temperature is in proximity thereto, it may be necessary to turn the lamp flame up or down, or move the regulator screw slightly, though a readjustment of the regulator is seldom required. However, if necessary, profiting by experience gained in having the machine run at 103 degrees when empty, you will have no difficulty in regulating exactly now.

Regarding change of temperature, we might add further that if from any cause the temperature in the egg chamber should be considerably reduced, such as when turning or cooling, or testing the eggs, or if the lamp should go out, you will find as the heat again raises in the egg chamber that the damper may open before the heat reaches the degree at which the regulator was originally set. However, do not be in a hurry to readjust; give it a little time, and the heat will gradually advance until it again reaches the proper point.

After the eggs have been in the incubator twenty-four hours they should be turned twice per day—morning and evening—until the even-

H A T C H I N G

ing of the nineteenth day, when they should not be turned or molested until the hatch is over.

To turn the eggs, open incubator door, remove one tray and place on the top of incubator; close the incubator door.

Have a regular time for doing this work—say every twelve hours. When the tray has been set on the top of the machine, remove



To Test Hold the Egg Before a Light.

three or four eggs from the centre of the tray, preferably in the middle rows, and roll the balance of the eggs inward toward the centre, placing the eggs taken from the centre in the vacant places at the outer ends. This is a simple and an easy method. Next turn the tray about—reverse it—and replace in the machine.

THE PERFECTION WAY

The operation of turning the eggs necessarily cools them to a certain extent. The exact time which should be required to cool and turn varies, depending on conditions, which every operator must master by experience.

Follow carefully the instructions for each day during the hatch, as set forth in the book of directions which accompanies the machine. These directions and instructions are generally the result of observation and practical experience on the part of the manufacturer, who it is presumed should understand his own style of incubator more thoroughly, and more accurately, than anyone else does.

With every properly equipped incubator an egg tester is furnished, and on the tenth day the eggs under incubation should be tested. Testing the eggs is a most interesting, and a most necessary operation. Have the tester ready for use in a darkened room. Removing the tray from the incubator hold each egg before the light. The eggs which are clear should be rejected as infertile; there is no evidence of the germ in them. Eggs that are completely darkened, and those showing a blood ring should be rejected also, because the germ in both is killed. The fertile egg will show a dark speck—an irregular shaped floating spot—from which veins radiate in different directions similar to a spider's web. If the light is particularly strong and the germ vigorous it can be seen to pulsate. The fertile egg should be handled with care and returned to the tray. When all the eggs have been tested, return the tray to the machine, and see that it is working properly and that the thermometer is registering 103 degrees, before you leave it.

H A T C H I N G

On the twenty-first day, if you have followed directions and operated the incubator correctly, and the eggs were hatchable, every fit egg will exclude a healthy chick. If mistakes have been made you cannot remedy them on hatch-



Incubator, 60 Hens' Eggs Capacity.

ing day, so do not interfere with the machine nor the chicks. Hands off.

On the morning of the twenty-second day the dry chicks may be removed to the brooder. Be

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sure that the majority of the chicks have been well dried off before removing them. You will have noticed that as the chicks hatch, and become strong enough to move around, they come forward to the light, and drop down through the space in front to the nursery underneath the trays. Chicks should always be left in nursery until perfectly dry and strong, and do not remove any while hatch is in progress, unless nursery becomes very crowded.

After hatch has been taken off, the incubator door and nursery drawers should be opened, and the interior of the machine thoroughly well aired. The wall of the egg chamber may be washed with soap and water, and some good disinfectant—zenoleum for instance. If the floors of the nursery drawer become dirty the felt bottoms should be renewed. It is well to cover the floor of the nursery with chaff, or old carpets. These will act as a cushion for the chicks and will be easily removed for cleaning. Clean the lamp and burner thoroughly. After the burner has been used for a couple of hatches it should be washed in boiling water. Wash the glass in the incubator door. Place the thermometer away carefully, and if you do not intend to reset the machine at once remove the water from the tank. Open the drain cock and tilt the incubator so that the water will all run out. Store the machine away in a dry place with care.

In conclusion of this chapter let us strongly impress upon those persons who adopt the artificial method of hatching to give the matter fair attention, and always keep in mind the several essential factors which we have set forth. If you do success will crown your efforts.

PLAN OF HEN-1

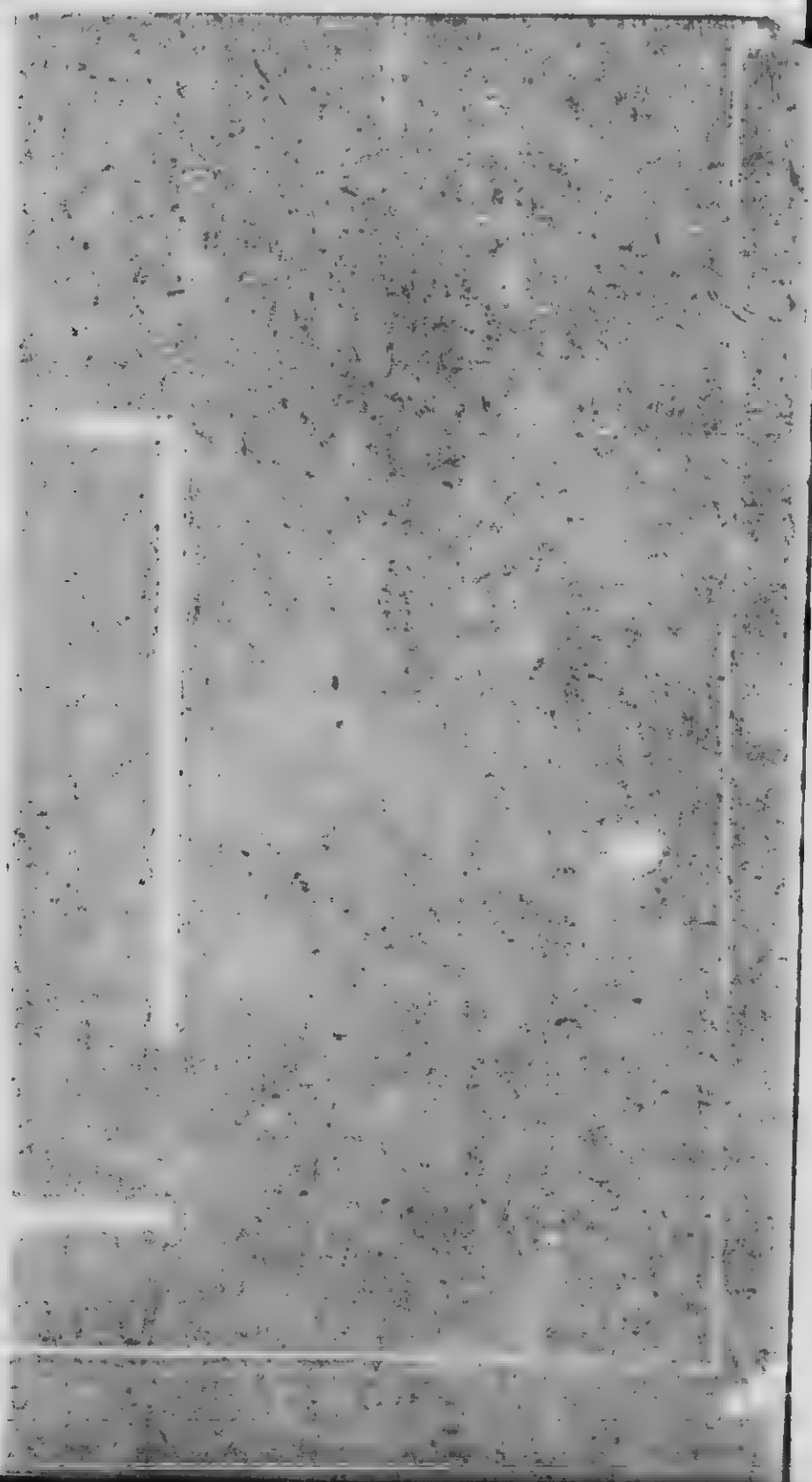
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CHAPTER IX.

BROODING.

WHEN the chicks are hatched—what then? Hatching is important, but the treatment which the chicks receive the first four weeks after they get out of the shell counts a whole lot more. That is the period during which care and attention play the biggest part. It is really the make or break time.

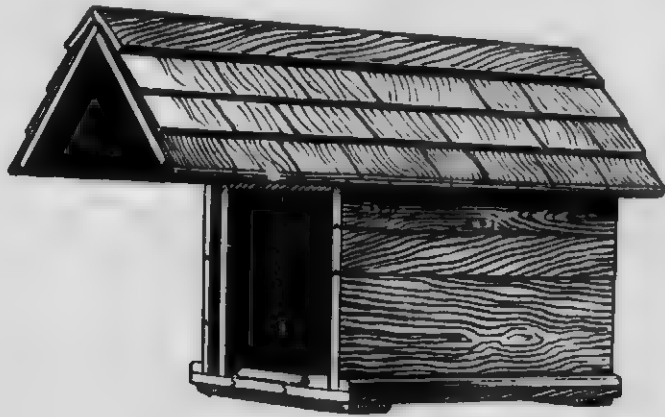
In brooding by the natural method the hen must be given every chance to look after the chicks properly. A roomy coop should be provided, situated in a dry place, and always kept clean; and the mother hen should be dusted with sulphur occasionally, so that there will be no opportunity for lice or mites getting at the chicks. The best coop is one made about 30 in. x 30 in., having a shed roof, the ends being 24 in. high in front and 14 in. high at the back. Slat the front, leaving a small doorway, which can be closed at nights.

In locating the coop select a spot where a run will be provided, because chicks, like all young animals, are active and need exercise. Indeed, chicks are particularly fond of exercise, and will follow the mother almost any distance and anywhere. This peculiarity has no doubt forced itself on the reader's notice at some time or other. However, too much of a good thing spoils it, and very often the old hen seems quite thoughtless of her young and will trail through wet grass or grain. The dampness is detrimental to the welfare of the chick, and it is therefore advisable that the yard over which the hen and brood may range

THE P E E R L E S S W A Y

be limited to dry soil. Young chicks should never be permitted to run on moist land.

Feeding and other general care in rearing, as discussed in another chapter, is, of course, applicable, whether natural or artificial brooding be employed. We may only add in this respect that upon the attendant, to almost the same degree as upon the food, in natural brooding, depends the achieving of satisfactory or unsatisfactory results.



Coop for Hen and Brood.

Artificial brooding we desire to discuss somewhat fully for two reasons. First, because in this method is offered the greatest chance to start the chicks on a healthy career free from disease, and anyone knows that the quicker and sturdier a chick grows, the sooner it will be ready to lay eggs, or be sent to market; secondly, because artificial brooding has become so general that it is practically recognized as the real system of rearing chicks. Even poultry raisers who use the hen to hatch,

B R O O D I N G

brood their chicks artificially after they have had a year or two of experience.

Brooders vary in size and design, but the main requisite we must look to in them is the maintaining of proper temperature; the securing of ample ventilation; that the machine be dry and easily cleaned; that the chicks may always be seen; that the brooder is well con-



Artificial Brooding Offers the Greatest Chance to Keep Chicks Healthy

structed and safe. A brooder should be solid and staunch and put together in a way and of such material that inclement weather will not affect it. Warped lumber would mean gaps to let in the cold wind and rain upon the tender little chicks.

The heating arrangement should be capable of maintaining a temperature of 85 degrees,

THE PEERLESS WAY

and the heat always clean and healthy. Clean heat can be had by using a brooder in which the lamp chamber is in a separate compartment, having the fumes discharge through a direct unbroken flue, thus conveying the poisonous gases straight from the lamp into the outer atmosphere. Let the warmed air come from a hot water heater so situated that the heat is uniform and evenly distributed in the hover chamber. Some brooders are hottest at the side nearest the lamp—and the chicks trample each other to death crowding against that side. Some brooders have a cylindrical screen of wire to keep the chicks from getting into the heat flue, and they jam each other flat crowding for places against the warm wire. Some, again, carry the heat along under the floor—bottom heat; and that makes the chicks weak-legged, and develops bowel disease, because little chicks sleep spread out on the floor, belly down, and the hot floor overheats their intestines and causes fermentation of the bowel contents. Other brooders, the worst of the lot, bring the lamp flues into the brooder and poison the air. They are warm enough alright, but deadly.

In the regulation of the brooder temperature, experience and circumstances surrounding one's special case are the best guides. Consideration must be given to the breed of chick, and naturally those which feather early in life would not require the same high temperature as those whose plumage comes late.

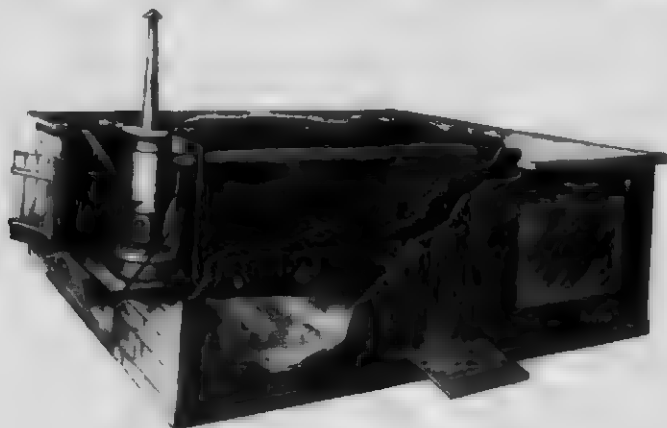
A brooder should be well ventilated. That is, it should possess a heating arrangement which allows giving, not only the proper temperature, but also an ample supply of fresh air. How? By using a machine which is high

B R O O D I N G

and roomy, and of a capacity which in conjunction with the regular ventilation allows each chick enough cubic inches of air space.

Referring further to the illustration, we draw attention to the partition separating the hover from the scratching yard. Inside the hover it is from ten to fifteen degrees warmer than outside, so that the chicks can choose just the temperature they like best.

We do not put too much stress upon the necessity of having a thermometer in the



The Interior Arrangement of Brooder.

brooder because the chicks, moving in and out of the hover, constantly change the temperature, and thus make the instrument of little use. The safest way is to judge by the actions of the chicks themselves. When they have sufficient heat you will notice them spread out through the hover, whereas if they are cold they will huddle together and heat may be applied accordingly.

Now, while you are looking at the picture,

THE PEELESS WAY

notice the two windows in front. These give lots of light and sunshine to the exercising yard. If this end of the brooder is facing the south the sunshine enters the exercising and scratching yard almost all day, and as sunlight is the greatest purifier, it helps keep the interior sanitary. And here let us emphasize the absolute necessity of keeping the brooder scrupulously clean and dry, otherwise you will



Opened for Cleaning and Airing.

have sickly and vermin-ridden chicks. The machine illustrated has a hinged floor which allows of the whole brooder body being raised, and a scraper or broom will get every particle of dirt out of it in a few minutes' time.

The floor of the brooder should be kept littered, which helps to keep the interior of the machine dry, and throwing feed in the litter

B R O O D I N G

necessitates the chicks working. See that plenty of fresh water is supplied in an automatic fountain which may be placed in one corner.

The details of feeding and care during brooding and afterwards are taken up in another chapter, but let us here impress upon the reader that he must give close attention to the operating of the brooder. Use only the best quality oil in the lamp; keep the lamp well cleaned and the wick always neatly trimmed, thus ensuring the proper working of the heating arrangement. Make certain that the chicks are comfortable always, and if they are, you will see them grow to sturdy proportions with gratifying rapidity.

CHAPTER X.

REARING THE CHICKS.

IN the rearing of the chicks good sense and attention are necessary. Not too much attention, not too much kindness, but just enough, because it is a regrettable fact that overfeeding has killed a very large proportion of healthy hatched chicks. Indeed, we believe that of the difficulties found in poultrydom, probably the greatest to overcome is incorrect feeding of the chicks, the incorrectness of which largely consists in overfeeding.

The same rules in the feeding of chicks are applicable whether rearing by the natural method, or artificially. In the former instance a roomy coop, as instructed in another chapter, must be provided, so that the hen will have every chance to look after the youngsters properly. The coop should be situated in a perfectly dry place, and be comfortably arranged and always kept clean. In locating, select a spot where a run will be provided, because chicks like all young animals are active and need exercise. Dampness is detrimental to the welfare of the chicks, and it is therefore absolutely essential to success that the yard over which the hen and her brood may range be limited to dry soil. Young chicks should never be permitted to run on moist land.

When rearing artificially, and in this method is offered the greatest opportunity to start the chicks on a healthy career free from disease, the first step is to make certain that the brooder and everything about it is working satisfactorily.

As soon as the chicks are hatched their

REARING THE CHICKS

quarters must be ready for them. If they are to be placed in a brooder the temperature should be at least 85 degrees, so that the change from one machine to the other will not injuriously affect them. And right here let us impress the necessity of being very particular about this—remember the tenderness of the little tots—otherwise chill and subsequent disease will thin out their ranks with surprising rapidity. The brooder should be littered with fine chaff, which will require frequent renovating during the rearing, because thrifty chicks require clean housing.

Once in the brooder, what then? A feed? No, emphatically no. Not for thirty-six hours at least after hatching should chicks receive any food, preferably not for forty-eight hours. Certain would-be experts may criticize that advocacy, and other well meaning amateurs act contrary to it. If so they are working against Nature, and he who hopes to succeed in poultry raising must follow as closely as possible to the natural. Let us reason the matter out. The digestive organs of newly hatched chicks are in an incomplete state, and that particular portion of their system so designed for the purpose is at work assimilating the yolk. The complete absorption of the yolk is necessary, and the life giving properties contained in it are ample to support the chick for days. Therefore, feeding too soon not only forces premature action of the digestive organs, but also results in a choking of the already well filled body. There has never been an instance or a trace of bowel trouble on the Poultry Yards of Canada, Limited, plant, and one of the reasons we have been able to bring to maturity so many chicks we attribute large-

THE PEBBLES WAY

ly to withholding food from them until they have reached that stage where they could properly digest it.

The first thing to provide for the chicks is a fountain of fresh water and a quantity of fine grit. The first feed may consist of a ration composed of one-fifth bran, one-fifth shorts, one-fifth charcoal and two-fifths cracked wheat, dry. A good quantity of this may be mixed by using a pail as the measure. Give in such amounts that the flock will clean the board at one eating, and never allow the remains of a meal to stand before them. Nor is it even advisable to give the chicks all they will eat except at the last meal of the four or five they receive during the day.

When the birds are a week old the feed may be scattered in the litter, and the searching and scratching will furnish exercise and help develop the muscles. Occasionally make a mixture dry of oatmeal, hard-boiled eggs chopped fine, and bread crumbs, together with a few middlings mixed in. Intersperse this feed with greens, such as young grass, when it can be had, chopped onions, boiled potatoes, cabbage, table scraps, etc. Green bone and ground oyster shells are necessary, but in limited quantities.

Chicks should never be given sloppy food. Mashies are death doses to them. That gummed up behind difficulty is one result, and is always an indication of advanced bowel trouble. If any poultry raiser has a flock which has been visited with this trouble the only remedy we know of is to wash the part affected in warm water, and feed the chicks boiled milk or rice water, and afterwards dry food. Milk is good for chicks at any time.

REARING THE CHICKS

Most diseases, such as swollen feet, weak and crippled limbs, and cramps, are generally due to feeding highly concentrated food, which causes a total want of action in the digestive organs, thus losing the nourishment in the food eaten. Of course roup or colds are due to dampness, dirt, exposure or filthy quarters. However, like the diseases engendered through incorrect or overfeeding, they are nearly always brought about by the existence of wrong conditions which may be corrected, but which at the same time should never have occurred.



Rearing the Chicks.

In the regulating of the brooder temperature experience and circumstances surrounding one's special case are the best guides, and it would be difficult to lay down any hard and fast rules in this regard. Suffice that upon the attendant, to almost the same extent as upon anything else, depends the achieving of results. Different matters must be taken into consideration, such as the season of the year, the weather, the locality and the number of chicks.

THE PERLESS WAY

Naturally birds which feather early in life do not require the same high temperature as those whose plumage comes late. The chicks are their own best thermometer, and by their appearance you can always tell whether they are comfortable or not.

At ten weeks old the chicks for marketing should be selected and the best of the birds, which are to be retained for breeding, separated from them. The stock intended for market may be fed mash, and lots of it. They are now at that age that mash will suit them and help lay on the fat. Place the chickens in coops and feed from suspended troughs. A mash which has proven successful on our plant may be made of 50 per cent. cracked corn, 25 per cent. ground oats, 20 per cent. shorts and five per cent. flour, the whole mixed and moistened with buttermilk.

The pullets and cockerels selected to make up the breeding pens should be allowed on the range during the summer preparatory to the next season's work. Feed them whole grains, say 25 per cent. oats, 25 per cent. corn, and 50 per cent. wheat, giving them a liberal allowance. Once per week feed mangels, and also once a week feed green cut bone or meat meal, one oz. per bird. Have fresh water before them all the time.

A final word of caution in the work of chick rearing is, do not overcrowd, and under no consideration allow vermin of any description to gain a foothold around the poultry quarters. See that the chicks receive plenty of fresh air and that they are active always. In wet weather have them sheltered, but on fine days teach them as soon as possible to stay away from the brooder, so they may become hard-

REARING THE CHICKS

ened. Hardy chicks are vigorous, and vigorous chicks quickly grow up and become money makers.

We wish to discuss, briefly, the more common difficulties met with in raising chicks. As before stated roup or colds are due to dampness, dirt, exposure or filthy quarters. Cramps are the next thing to a cold and are simply the death struggles of a chick that has been ailing for some time. Practically nothing can be done to save the chicks after having contracted any one of these troubles.

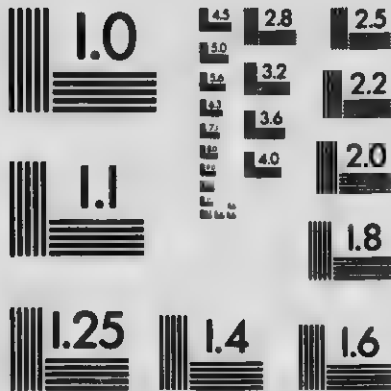
Prevention must begin in the management and care, and if these have been correct no such difficulties would present themselves. Diarrhea is caused by overfeeding, or sometimes by exposure also. Barley water is an effective remedy when administered in time. Leg weakness is very often due to excessive heat. Drooping wings is evidence of general debility. By isolating chicks so affected and giving them extra attention they may sometimes be rescued.

It is well to remember, however, that a sick chick is seldom worth trying to cure or rear. Unless a chick grows quickly from the shell to maturity its future success is to an extent injured. The slightest check through disease is a loss that cannot be made good. Care and attention, proper feed in correct quantities, and cleanliness, are the best remedies, because they are preventives.



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CHAPTER XI.

BROODING CONTINUED INTO COLONY SYSTEM.

TO secure the very best results and facilitate their proper maturation, it is advisable, in brooding chicks, to take them from the brooder proper when about eight weeks old and place them in a colony house. Here they will find more roomy quarters and better adapted to their increased size, and which will enable them to become sturdy and retain that vigor and vitality rightly theirs. In a season where there is a prolonged spell of inclement weather, placing the brooder in the colony house for the first few days has been found advisable.

Colony houses are constructed in many different sizes and of varied designs. Those set near the ground are made about 8 ft. x 15 ft. floor space, with a shed roof, front wall 5 ft. high, containing one or two windows, which open outward on hinges. Windows serve the two-fold purpose of admitting plenty of sunlight on the floor, and as a protection even when partly opened, against sudden early spring showers. The back wall of the colony house is generally made three and one-half feet high.

We would recommend constructing the houses up off the ground, for when so situated they offer more protection against dampness, skunks, etc., and moreover, are easier to clean. This feature, together with a design which allows the whole front lifting upward and out, has been combined.

A colony house ensures that the chicks shall have abundant fresh air and comfortable shel-

BROODING CONTINUED INTO COLONY SYSTEM

ter. In bad weather, when it is advisable to have them indoors, the feed can be scattered in a litter upon the floor and the chicks will busy themselves.

If at all possible the colony house should be located at the end of a runway of green grass.



Ideal Colony System. Note the Activity of the Birds.

When it is decided which chicks are intended for market these are separated from the others and placed in the fattening crates. Those which are to be retained as breeders may continue throughout the summer months in the colony house.

CHAPTER XII.

CLEANLINESS.

A CHAPTER WHICH SHOULD BE READ EARLY AND OFTEN.

THE word at the head of this page is one every poultry raiser should not only bear in mind constantly, but also rigidly live up to. Cleanliness is something about which one cannot be too particular. Cleanliness is a condition which should always exist. Cleanliness may mean success or failure very often, hence its importance.

That the seriousness of unwholesome, unsanitary, and, in fact, dirty surroundings, is not fully realized by the average poultry raiser we must regretfully admit, because seventy-five per cent. of the trouble encountered in raising poultry is directly traceable to the existence of unclean conditions. To a person not conversant with the situation, such a statement might seem incredible, but a cursory examination will soon convince even the ordinary observer that unfortunately cleanliness does not occupy the position it should in the poultry raiser's decalogue. Or rather, we should say, cleanliness does not occupy the position it should in the average poultry raiser's practical line. It is in the decalogue all right, but, like many another good precept, is not carried into effect.

Cleanliness means to be free from dirt. It bespeaks a condition of wholesomeness and purity. It savors of the ideal humanity strives for, and which civilization is enforcing. Cleanliness—the word in itself has a freshness about it that is buoyant and uplifting. The question

C L E A N L I N E S S

is how to keep it before you ever, so that, thinking of it, an endeavor will be made to continually make the condition a reality in connection with your poultry.

Keep the poultry house and runs clean. Fumigation is necessary to destroy vermin and any disease germs which seem to gather so easily. The walls, ceilings and floors must be sprayed at least twice a week with a solution, and it is necessary that you make certain the liquid penetrates every crack and crevice. Be vigilant about the secluded spots; that is where the trouble generally starts first. Fumigating should be done once per month, sulphur being perhaps the best and cheapest method.

To fumigate in the morning on a fine day remove the hens from the house and close up doors and windows tightly. Place a pound or two of sulphur in an iron vessel. Pour a little kerosene on the sulphur, and set the vessel about the centre of the house. Touch a match to the sulphur and hurry out. The fumes will make a dense cloud of smoke, and if the building is properly closed, every part will be fumigated, and you may depend that animal germs, parasitic life, rats, mice, etc., will be quickly killed. Leave the house closed most of the day. Towards evening—several hours before roosting time—the windows and doors must be opened and the house aired thoroughly for at least a couple of hours. Do not close up too tightly that night, in case the smell of sulphur may be too much for the birds.

Droppings boards must be cleaned every morning. Never mind if your first neighbor only cleans his once a week, and the next

THE P E E R L E S S W A Y

neighbor only once a month. The point is this, droppings boards must be cleaned every morning if one wishes to keep the hens in really healthy condition, and when cleaned daily the operation requires but a few moments. With a small board they may be quickly scraped into a pail, or other receptacle, and deposited outside the building in some specially prepared spot.

Fresh nesting material once per week; fresh litter at least every two weeks, but never allow either to be in use longer. If you do, then you need not be surprised if the egg yield decreases, or the fertility weakens, and worse still, that your birds become infested with lice. A hen cannot be expected to do good work unless her nest is in proper condition. Dirty eggs never come out of a clean nest.

The feed trough and drinking fountain are both important utensils, and to allow either to become dirty shows a disregard on the part of the attendant that does not augur well for the productivity of his flock. The poultryman who is so thoughtless with reference to his birds that he allows musty food to accumulate in the feed box, and dirty water to remain in the drinking fountain, is simply torturing the creatures he expects to bring him profit. How can a hen give good eggs, and lots of them, when she must eat out of an evil-smelling trough, or drink from a disgustingly putrid water supply? And yet there are thousands of birds in this country which receive no other treatment, and their owner wonders why they are not coining money for him as he believes they should. What obligation, we might ask, are birds under, to an attendant who makes them take from dirt all the elements used for

C L E A N L I N E S S

their own up-keep, and the formation of the eggs they lay? Reader, the few moments required daily in making certain that the feed and feeding troughs are wholesome and sanitary, and the drink supplied with fresh water, is time that could not be used to better advantage, and more profitably, to yourself or to your hens.

Now about the runs, or range over which the flock may roam. We are in favor of a limited area. Not confinement, where such can be avoided, but at the same time there is no advantage in giving the flock the use of the whole farm. If you allow them such a vast range, then certainly it would be difficult to keep the birds clean. They will naturally be in all manner of places, and returning in the evening they carry dirt into the house, sometimes with dire results. The best plan, our experience has been, is to limit the birds to a certain well defined area of ground where ample opportunity will be afforded for scratching. It is then much easier to keep both the flock and the run in good condition.

Be particular about the cleanliness of your eggs, because there is nothing will turn a prospective purchaser against you quicker than the sight of dirty eggs. This is equally true, of course, whether the eggs are for domestic use or for hatching, and in regard to the latter it is now a well-established fact that a great many of the ailments of small chicks are traceable to infection from germs deposited on the egg by the fowl in laying. The remainder of the ailments are due to germs picked up by the chicks on contaminated litter, or earth, which bring us to the point where we desire

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to impress the absolute necessity of cleanliness, above almost everything, in chick rearing.

Cleanliness is a noted factor in the successful growing of baby chicks, as well as being essential to the health and vigor of parent stock. More so, in fact, because a small quantity of filth will naturally create more havoc among a flock of young stock than among the older, stronger and more matured birds, who are able to withstand the attack. Therefore, poultrymen must be very particular in regard to cleanliness of the brooder and chick quarters generally. These must be kept scrupulously clean, and the only way they can be so kept is by giving them constant and regular attention.

The market calls for clean dressed poultry. Diseased or badly handled birds are not wanted. Cleanly killed and cleanly packed fowl are attractive. They bring a good price, they inspire confidence in the person selling them, and this means increased trade.

Careless packing and rough handling detract from the sale of poultry generally, and carelessness means uncleanness. To properly develop the poultry industry it will be necessary for those interested to see that only clean stock reaches the market.

Therefore let CLEANLINESS be the watchword of every poultryman who reads these lines. The motto is a worthy one; it permits of looking upward and onward, and if faithfully adhered to will lead to the realization and gratification of deserved success.

CHAPTER XIII.

FEEDING AND PREPARING TABLE FOWL FOR MARKET.

QUANTITY, that is the word we must constantly and earnestly bear in mind when becoming familiar with, and carrying into effect, the feeding and preparing of table fowl for market, because the only sure road to success in raising poultry for marketing is quality. Unless the products reach the market, or in other words, the purchaser, whether it be a commission man, a wholesale house, a hotel, a club or a private home, in perfect condition, then all your work has proven practically futile. Discolored, ill-shapen, badly handled and indifferent stock, will bring poor returns. Clean, bright, well-fatted birds, on the other hand, are always inviting, and certainly the best appearing fowl always sell at a high price.

In proportion to the quantity of poultry sold, altogether too large an amount is poorly dressed, and equally poorly fleshed. This condition of affairs, we believe, is due simply through ignorance of the best methods of fattening and dressing birds. To arrange products properly for market, and in order that they may reach there in as inviting a state as possible, it is necessary to study the details of fattening, killing, plucking and packing, and to faithfully carry into effect the practices which successful poultry men have proven to be correct.

The requirements of nearly all the markets for poultry are similar, so that the methods outlined herein are applicable to every section of Canada.

When the birds which are to be marketed

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have been selected—the most profitable age is between three and four months old, though birds of almost any age may be fattened—the idea should be to have them, as a result of your labor, plump and well fleshed. There are three methods of fattening, that is, in crates, in rooms and running loose. While the latter system is to a certain extent satisfactory, we would not advise its use, because the birds are thus exercised, which has a tendency to waste food, and at the same time toughen the flesh.



Room Feeding.

Crate fattening is the placing of chickens in crates constructed for that purpose, and either cramming or feeding from troughs, or both. The crates are generally made of slats, the size of the crate being six feet long, sixteen inches wide and twenty inches high, and divided by solid wood partitions into three compartments, each compartment holding four birds. The slats are usually one and one-half inches wide

FEEDING AND PREPARING FOWL FOR MARKET

and five-eighths inch thick. Those in front are placed two inches apart to allow the chickens to put their heads through for feeding. The slats on the bottom are placed about three-quarters of an inch apart, so as to admit of the droppings passing through to the ground. Care should be taken not to have the first bottom slat at the back fit too closely against the back. An opening between the first slat and the back prevents the droppings from collecting and decomposing. The slats on the top and back are usually two inches apart.

There is a small "V"-shaped trough, placed on stands, about two feet from the ground, two and a half inches deep. The bottom of the trough is four inches above the bottom of the crate, and the upper inside edge two inches from the crate. In warm weather the crate should be in a shaded or darkened place, and in unsettled weather must be sheltered from the rain. During the cold weather the crates are placed in a warm building, always making certain that abundant ventilation is supplied.

Ten to fifteen days are generally required to fatten birds in crates. For the first few days it is necessary to feed lightly, the food being given twice daily, and after the birds have eaten what they require, the crates are cleaned. Quantities of fresh water must be supplied constantly, and also grit two or three times each week.

Where the cramming process is in vogue it is brought into action as soon as the birds show signs of loss of appetite. The food mixed with milk and water, to about the thickness of porridge, is placed in the hopper and forced through the rubber tubing into the chicken's

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crop. The cramming process is continued for about ten days.

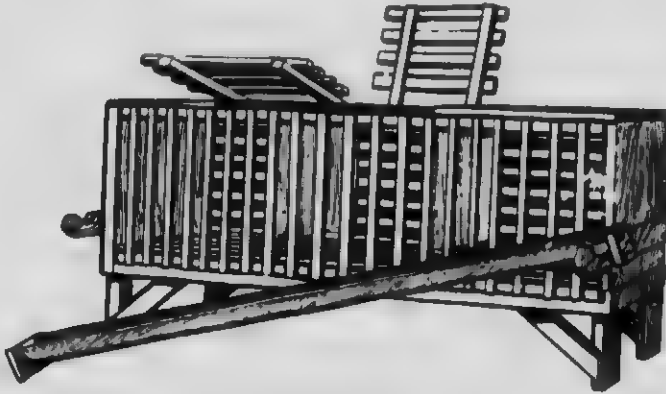
Now, with reference to the crate fattening system, while there is no doubt of its effectiveness, yet it is somewhat expensive, since it requires considerable labor and building. So in considering the three systems, we unhesitatingly recommend for the average Canadian poultry raiser the more natural method, that is, room fattening, which system is one principally in vogue on our plant at present, with a few days finish in the crates, if experience proves this advisable. Room fattening is practical, simple and surely successful. Special houses are not necessary, any clean, slightly darkened structure filling the purpose admirably, the idea being to give the fowls shelter and quiet, while plenty of rich, wholesome food is supplied. Our pen fattening is done in our brooder houses, so that this building is economically used the whole year, affording an example every farmer will do well to follow.

FATTENING RATIONS.—The house is divided into small pens, and a good number of birds are placed in each division. Here they do not fret or exercise. They are allowed to get good and hungry before the first feed is given. For the first few days feed sparingly, for the next week all they will readily consume twice per day, and during the last days let them gorge themselves.

Fresh drinking water is kept before the birds in clean drinking fountains throughout the fattening period. The feed is given in troughs, which are cleaned and hooked up to the wall when not in use. This is a very important point, because the sour or stale remains of a

FEEDING AND PREPARING FOWL FOR MARKET

meal must never be allowed to stand before the fattening stock. A suitable ration, and probably the most palatable, may be made, having finely ground oats as the basis of the mixture. Either two parts ground oats, two parts ground buckwheat, and one part corn; or equal parts of ground oats and ground buckwheat; or two parts flour, two parts ground barley and one part wheat bran, when mixed with skim milk, sour milk or buttermilk, to a thin porridge, make satisfactory feeds. A quantity of meat



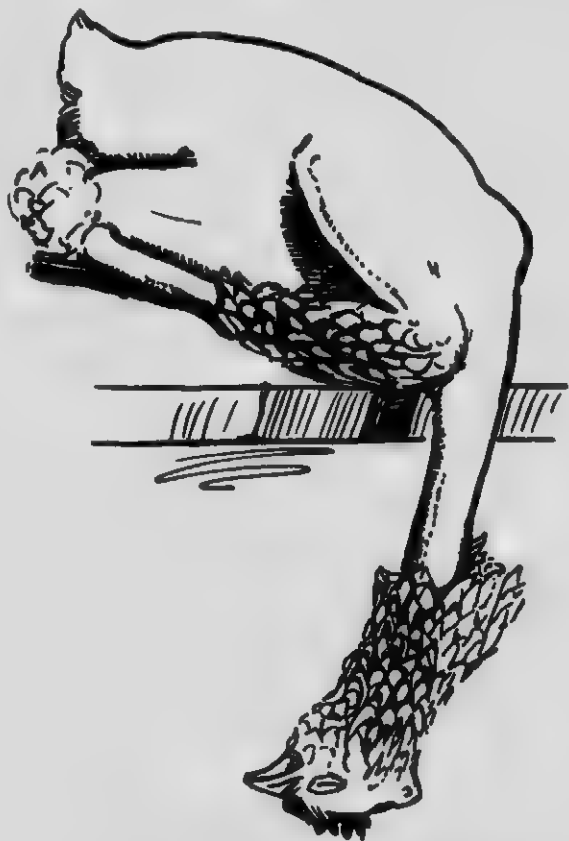
Fattening Crate.

meal, beef scraps and greens should be mixed with the mash on alternate days.

MARKET REQUIREMENT.—In fattening poultry—we are now referring to chickens—the object must be to conform as nearly as possible to market requirements, which may be summarized as follows: The breast in shape should be long and broad, so that when dressed the bird will have a plump appearance. Breast meat is the best part of the chicken. With reference to the color of the flesh, some localities desire

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a white, well-grained flesh. Oats and skim milk have a tendency to produce the whiteness. When yellow flesh is preferred, feeding corn meal instead of oatmeal will generally bring



The Breast Should be Long and Broad so That When Dressed the Bird has a Plump Appearance.

about the desired effect. Short legs, indicating the low, blocky type, are a good feature in fatted birds. The legs should form as small a

FEEDING AND PREPARING FOWL FOR MARKET

portion of the weight as possible, because the meat is largely composed of sinews, and therefore inferior. The bone and offal should be small and well rounded. About four pounds is the preferred weight of dressed fatted chickens.

FASTING.—A too common mistake resulting in the spoiling of many promising market birds, is killing them when their crops are full. When you see a dressed bird showing green spots of decomposition on its flesh, this trouble can invariably be traced to the fact of it not having been fasted. Birds must fast for at least twenty-four hours before killing, so as to completely empty their crops and intestines. This is a feature about which one cannot be too particular.

KILLING.—The methods of killing poultry are many and varied. Mentioning killing, almost at once associates the average mind with the too well known and ancient practice of decapitation, which we must condemn as disgusting and certainly unsanitary. Killing a bird by chopping its head off might seem correct at first thought, but is not. The bird cannot bleed freely (it is very important that all blood be removed from its body) because the neck of a headless fowl crooks upward and stops the flow, causing the formation of clots, which produce coagulation. Furthermore, the exposed portion of the neck leads to early decomposition and spoiling of the flesh.

A second method of killing is by cutting through the roof of the mouth by means of a sharp knife. If correctly performed, death follows instantly, and all blood flows through the mouth from the body, leaving no unsightly wound. However, if the operation is improper-

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ly done the outside of the bird will show discoloration. The simplest and surest manner of



Killing by Cutting Through the Roof of the Mouth with a Sharp Knife.

bleeding is to hold the bird under the left arm, and with your right thumb on the neck force

FEEDING AND PREPARING FOWL FOR MARKET

open its mouth. Insert the knife with the right hand, first severing one artery and then the other, and next piercing the brain, it being necessary to drive the knife through the roof of the mouth towards the top of the head concurrently giving it a quick half turn. If you have done the work properly the bird will shiver and give a convulsive flutter; it is paralyzed for the instant and then dead. Immediately hang it with a stout cord, feet up and head down and allow to bleed. Plucking should be commenced at once while the bird is warm.

A third method is dislocation of the neck, very practical and satisfactory, when done rightly, but as in the sticking process, a little practice is required before one becomes proficient. There is no danger of strangulation, in which event a bird is not fit for food. To properly dislocate the neck of the fowl, catch either the legs or wings in the left hand, and rest the bird on the right knee, taking hold of the head of the bird between the first and second fingers of the right hand, palm of hand toward the back; then holding the body firmly with the left hand, tip the head of the fowl slightly backward with the right and by a swift, steady pull downwards stretch the neck until the artery or jugular vein severs. You will feel it give, and very often hear the crack when dislocating. The bird is dead instantly, and every drop of blood in its body flows into the cavity caused by the stretching of the neck. It cannot congeal, there is no outward mussiness, and the blood is preserved. On one thousand birds the quantity thus saved and credited in weight to the vendor, is quite a consideration.

THE PEERLESS WAY

DRY PLUCKING.—Immediately after killing, the feathers should be removed carefully and cleanly. The aim must be to send dressed fowls to market, if possible, without the skin being broken at any place, and the dry picking or plucking method is the one that will produce this desired condition.

Scalding by dipping the birds in boiling water and then rubbing the feathers off, is not satisfactory, because in every case the appear-



A Corner of the Plucking Room.

ance of the bird is practically destroyed. The scalded skin rubs off here and there when the feathers are being stripped, and a scalded bird cannot stand any exposure or variation in temperature, and remain fresh in appearance. A visit to a store or market handling poultry will demonstrate the fact most convincingly. Dry picked birds are much more to be desired as a salable and also palatable article than the

FEEDING AND PREPARING POULTRY FOR MARKET

scalded product. Dry picked poultry is becoming more and more in demand, and the day is approaching, it cannot arrive too soon, when dirty, ill-smelling and repulsive looking scalded poultry will be barred from the market altogether.

To effectively pluck a dry bird, it is necessary that all the feathers be removed before the carcass has cooled. Having the bird suspended head downward, at a convenient height, its back towards the operator, grasp the wings with one hand and pull the long feathers with the other. To remove the wing feathers pull downward quickly. The stiff feathers at the shoulder joints are pulled upward. With the thumb and forefinger around each shank remove the feathers from the back, using both hands, beginning at the tail and passing down by the wings and around the breast. Turn the bird and perform the same operation on the other side. Strip the feathers on the neck, leaving a band, say two and a half inches wide, near the head. A bunch of feathers should also be left to cover the leg joints and the last two small flight feathers, as well as all the small feathers on the tips of the wings, should be left on. Any visible pin feathers may be removed with a blunt-edged knife, and the bird is ready for plumping.

PLUMPING OR SHAPING.—Shaping a bird means giving it a plump, attractive appearance, in other words, showing it compactly to best advantage. A bird is shaped as soon as it is plucked. The wings are folded by turning the tips behind the shoulder, and the legs are placed alongside the breast. A shaping frame may be made, as shown in the two illustrations, by nailing two six inch by seven-eighth inch

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planed boards together at right angles, forming a trough. The trough may be made six feet long and nailed into the frame; having it inclined slightly backwards.

The birds when ready are forced into the angle of the shaper, breast downward, then



Shaping a Bird means Giving it a Plump Appearance.

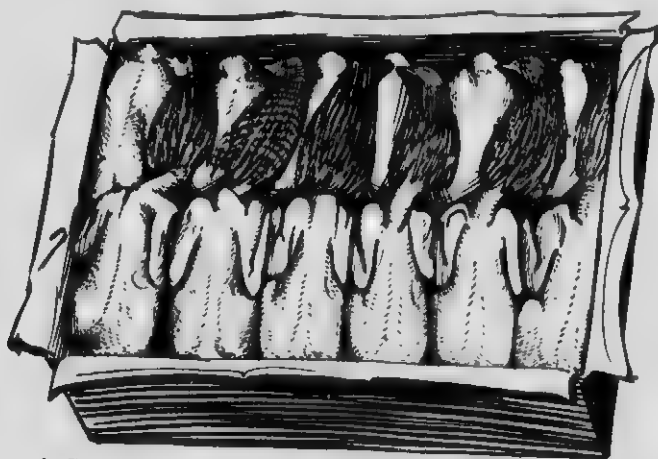
covered with paper, and a weight is placed on the back to hold the body down. Care should be exercised to shape and cool the birds in as low a temperature as possible, about six to twelve hours being usually sufficient.

FEEDING AND PREPARING FOWL FOR MARKET

PACKING DRESSED FOWL.—Pack your poultry neatly and carefully. If catering to a special



Illustrating Method of Placing Bottom Row in Case.

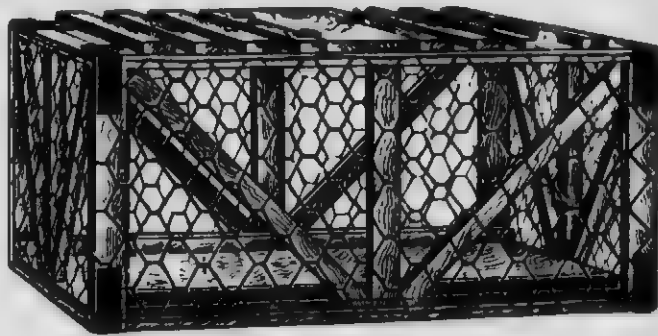


A Correctly Packed Case of Poultry Ready for Cover

trade there may be some particular manner in which it is desired to have the birds done up.

THE PERFECTION WAY

Ordinarily good, strong and sound barrels or boxes are best. See that they are well washed and thoroughly clean before using. Line the inside of the packing case with parchment paper—never use newspaper—and allow a good quantity to extend over the edges to be used as top covering. If the weather is hot and the shipment has to be forwarded some distance, it is advisable that a layer of broken ice be placed in the bottom of the case. The first row of birds are laid with backs down, and the second row are laid with the breasts down and



Crate for Shipping Live Poultry.

the heads extended across between the birds of the first row. A few pieces of ice should be placed over the birds, and the parchment paper well tucked in. The name and address of the shipper, the number of birds, kind and weight, should be plainly marked across the top of the box, as well as the name and address of the consignee.

During cold weather poultry can be packed in the same manner, except that ice would not be required.

SHIPPING LIVE POULTRY.—The shipping of

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live poultry in quantities is becoming a more general custom, and yearly we purchase on foot thousands and thousands of birds, from the immediate and surrounding district in which our plant is located. These birds are fattened in our own pens and crates, and also killed and plucked by us.



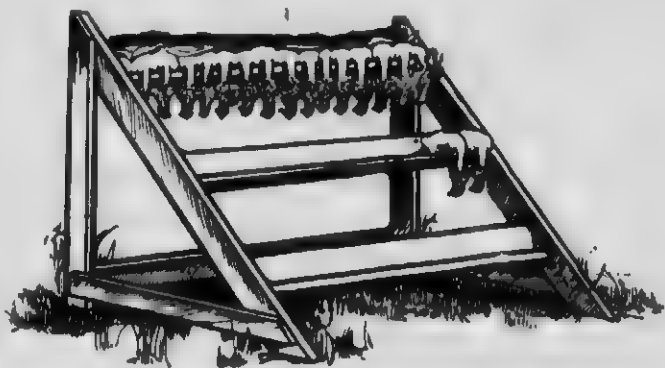
Killing by Dislocation is very Practical and Satisfactory.

Shipping crates for live poultry should be roomy and comfortable, constructed of light material, and yet strong enough to withstand the rough usage they generally receive at the hands of express company employees. If large coops are used these should be partitioned so

THE PERLESS WAY

that the birds will not be thrown against each other, towards the sides or ends. Suffocation and death very often result from the tilting of the open coops, which allow the birds to jam and fall on top of each other.

In making up a crate of live poultry for shipment it is best to place birds of a uniform size in each, and never ship old and young stock together, nor birds of different sexes. Diseased or emaciated stock must never, under any consideration, be shipped with a bunch of live poultry. The dishonest poultryman who at-



Shaping Machine.

tempts this malicious trick is injuring himself, because very often a contagious disease will spread through the whole shipment en route, and the result is the purchaser will not accept the shipment at all. And even if the other birds do not become affected, you can rest assured that the experts who receive in and weigh the shipments, will notice and cull out the diseased fowls, even if there is but one.

The shipper should have his name branded on the crate, so that it may be correctly return-

FEEDING AND PREPARING FOWL FOR MARKET

ed to him. The number and weight of the birds contained in each crate ought to be plainly marked on it also, and an invoice containing the same information mailed to the consignee on the day shipment is made.

DRESSED TURKEYS, DUCKS AND GEES — instructions given in the foregoing pages with reference to the fattening, killing, pluck and marketing of chickens are equally applicable in the case of turkeys, ducks and geese. Accordingly as the market and price demand they are prepared, and the better condition and handled, the better the price.

CHAPTER XIV.

CO-OPERATION AND CO-OPERATIVE CIRCLES.

CO-OPERATION is, as stated in another chapter of this book, a very important factor in the work of poultry raising because the existence of a co-operative spirit among poultry producers not only enables them to come together in the adoption of breeds and types, and in the interchange of useful information, but also, and undoubtedly primarily, co-operation enables the small producers to mutually assist each other in the selling of their poultry and eggs for better prices, and at bigger profit, and enables them to keep in touch with buyers who put a premium on quality, and therefore always pay the highest prices. Co-operation is the means that is offered to individual poultry raisers to join one with the other in personal and in general advancement.

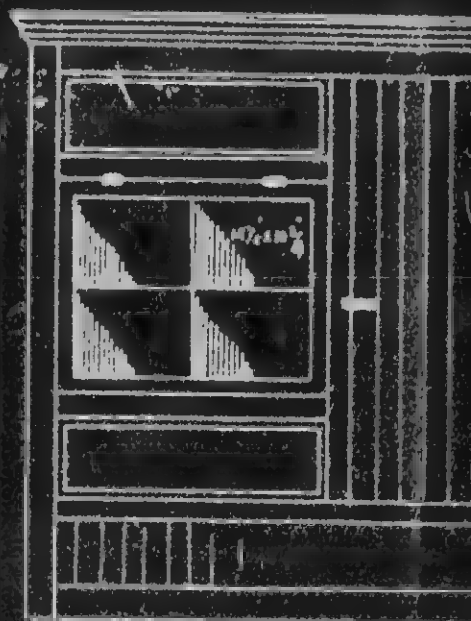
It seems unnecessary to herein dwell extensively upon the moral force, and power, resulting from co-operation. Unity as we all know means strength, and co-operation is much more than even unity. Co-operation in the rearing and marketing of poultry is the banding together of progressive labor.

Co-operation when its functions are properly understood, and carried into effect, no matter how large or how small the scale, will inevitably redound to the welfare of the co-operators.

Co-operation in the marketing of poultry and eggs has attained greater results in that old, and sometimes mistakenly termed old-



END ELEVATION



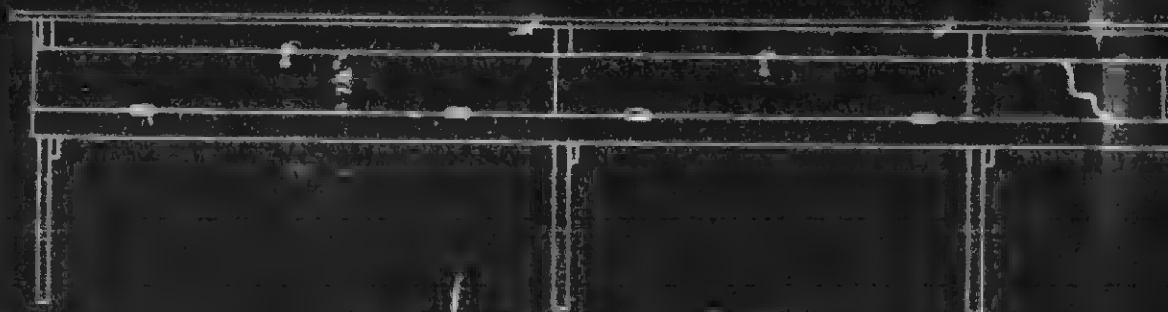
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Scale



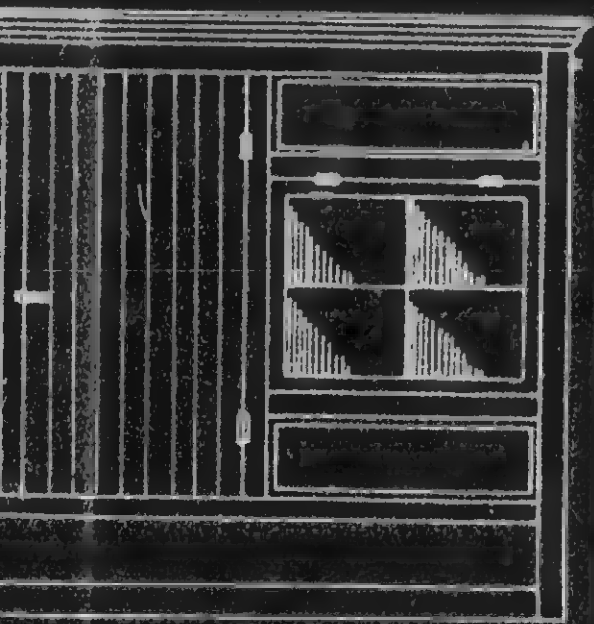
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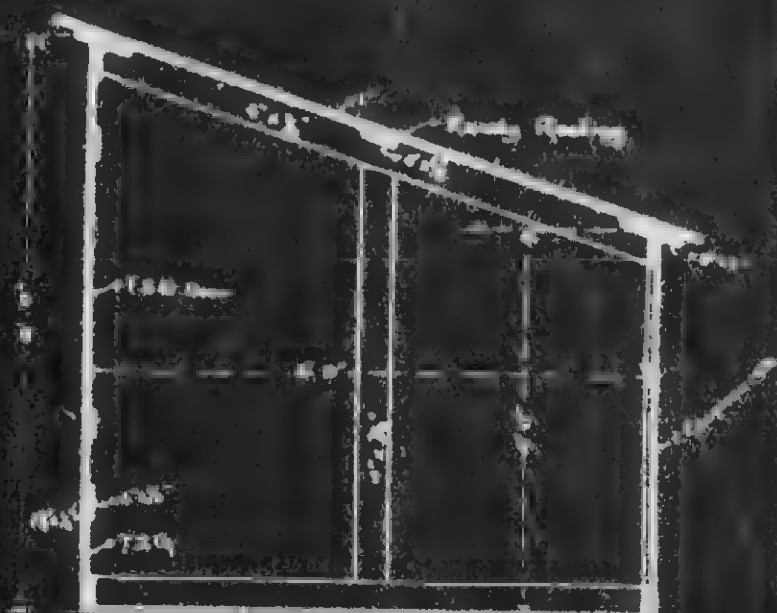


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SECTION A-B

COLONY HOUSE

Scale - $\frac{1}{2}'' = 1'$



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FEED-HOPPER

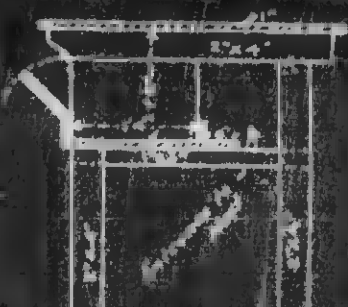
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SECTION



END



SECTION

NESTS

Scale $\frac{1}{2}'' = 1'$



CO-OPERATION AND CO-OPERATIVE CIRCLES

fashioned country of Denmark, than in probably any other country in the world. We may therefore study and adopt with every confidence the methods of the Danes; in so far, of course, as these are applicable to conditions in our own country. The Danish Farmers Co-operative Egg Association is well and favorably known. It is to-day an immense organization.

When our company determined upon the formation of co-operative egg circles a thorough investigation was made into all systems of co-operation existent, and we have especially studied the Danish idea with the result that we have to a very great degree incorporated in our scheme the best we found in the other. Since the Poultry Yards of Canada, Limited, Co-operative Egg Circles have been in operation there has been a tremendous advance in the quantity, and quality of the eggs handled, and a corresponding, though even more apparent, advance in the prices paid. Our co-operative egg circles have been a splendid success, and are constantly spreading out and embracing more territory, and attracting to their ranks more poultry raisers.

Regarding the formation, government and operation of a co-operative circle, there must be a beginning and a head, and every member is, without special declaration, under the rules of the Circle. Members are accepted upon recommendation of the officers of the Circle, which consist of twelve members, and are governed by a board of directors consisting of five members who are elected annually, and by a majority of the members. The surplus funds of the Circle are handled by the direc-

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torate, who are supposed to take care of the Circle business in the best manner possible, and who of course see that all eggs are delivered in good condition, and are of the quality demanded. Besides, every member is naturally expected to feel it his duty that every other member fulfills the spirit of the constitution of the Circle.

Regarding domestic eggs, members must deliver all eggs produced by their own hens—home consumption, setting eggs, and accidentally found, small, or ill-shapen ones excepted—in the manner decided by the Circle. The eggs must be collected carefully every day, and in the hot season twice a day at least. Accidentally discovered eggs (stolen nests) must not be delivered. Artificial eggs only may be used as nest eggs, and the hens must be kept from the nest during the night. Only clear eggs may be delivered, and these must be kept protected against the sun, rain or frost. No eggs older than a certain date, depending upon circumstances and market demand, may be delivered and upon this point we are very particular. Transgression of the rule, as well as the delivery of stale eggs, is punished by a fine, and the actual loss to the Circle through the delivery of such eggs.

Deliveries of eggs are made to a certain point, the place most convenient for everyone concerned being selected, thence the eggs are transhipped to Poultry Yards of Canada, Limited, at Pembroke, for distribution in the markets most suited.

All deliveries of eggs are paid for once per month, the price being the very highest obtainable, taking into consideration the fluctuations and conditions of outside markets.

CO-OPERATION AND CO-OPERATIVE CIRCLES

Having a system of co-operation the product of the community embraced by each Circle can be calculated, and the Manager of the Circles knows precisely what quantity of poultry may be expected, and the quality thereof, and he looks for his markets accordingly. A premium is placed upon the Circle output, and the individual members profit, just to the extent to which they have devoted their energies to the production of good goods.

In table fowl the system works much the same as in the gathering and marketing of the eggs. There is of course methodical regularity of delivery, and the co-operative circles aid in the improvement of the stock and in delivering of the product, and thus the securance of the very best prices. Birds purchased are graded under a schedule which agents endeavor to follow as closely as possible. The schedule divides into grades, as follows: Chickens, known as selects, consist of specially fattened stock, extra well fleshed, and of superior finish and appearance, having an unbroken skin, being without blemish, and having a straight back bone.

Chickens known as No. 1, consist of well fleshed stock of neat appearance, having a straight breast bone and no disfigurement.

Chickens, known as No. 2, consist of fairly fleshed chickens, the term chicken in this case, as in all others, meaning birds under seven months of age.

Fowl are classed in three grades also, the selects to consist of birds not over two and one-half years old, being specially fattened and extra well fleshed, and having no blemish of any kind.

THE PEEPLESS WAY

No. 1 fowl have to be of neat appearance, with straight breast bone and no disfigurement, and No. 2 fowl we insist must be fairly fleshed.

In the grades cocks are not included. These are purchased on their own merit and according to conditions and prevailing market prices. In the grades we do not include any birds that have been sick, birds that have food in the crop, that have decidedly crooked breast bones, or birds that have blood or other dirt upon their bodies.

The result of the foregoing schedule when applied in conjunction with co-operative circles works out admirably and to the entire satisfaction of buyer and seller. Co-operation brings the producers together, upon a common footing, as it were, and the purchasing schedule grading the stock demonstrates to the producers individually the advantages to be derived from continually improving their flocks. Quality counts, both in table fowl and in eggs, and co-operation undoubtedly improves quality.

With the information set forth in the foregoing, and an earnest desire to co-operate, there is no reason why the farmers of any community may not rear and market their poultry and eggs to advantage and with greater satisfaction and profit than is otherwise possible.

Co-operation is organization for the benefit of the co-operators; co-operation means an improvement in quality, an improvement in market, and an advance in price. Co-operation does not permit of selfishness; co-operation permits of no individual advancement to the detriment of others. Co-operation is equal, and it is fair.

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The editors of this book will be glad at any time to assist any co-operative poultry movement, and place their services, and the services of their institutions in the hands of those desiring co-operation. We know the good a co-operative system, properly originated on a correct principle, and managed for the profit of the members, can accomplish, and we would like to see genuine co-operative poultry raising and marketing throughout the country.

RULES GOVERNING CO-OPERATIVE CIRCLES.

1. The Circle shall be primarily co-operative, and for mutual aid, and every member is, without any special declaration, under the rules of the Circle.
2. Members, recommended by the officers of the Circle, are accepted on application to the Manager of Co-operative Circles.
3. A Circle shall consist of at least twelve members, and shall be governed by a Board of Directors consisting of five members, to be elected annually by a majority vote of the members present.
4. Each member shall pay to the Secretary of the Circle, an annual fee of One Dollar, which shall become the property of the Circle.
5. Meetings shall be held whenever the Chairman thinks desirable, and the regular annual meeting will be held on the first Thursday in January, and at least six days' notice of such meeting shall be sent by the Secretary to each member of the Circle.
6. The Directors shall be responsible for the surplus funds of the Circle and shall take care

THE PEELESS WAY

of the business of the Circle in the best manner possible, seeing that the eggs are delivered in good condition and of the quality demanded, and each member should feel it his duty to see that every other member fulfills the spirit of the constitution of the Circle.

7. The Circle Directors may temporarily refuse to accept eggs from a member, and a member may be expelled by a majority vote of the Directors, but before doing so notice thereof must be sent to the Manager of Co-operative Circles, and his sanction obtained for taking such action.

8. The membership list of the Circle must show the name and Post Office address of each member, as well as a description of the breed or breeds of fowl kept by him; also his Circle number with which his eggs are stamped. Changes in the list must be reported by the Secretary of the Circle to the Manager of Co-operative Circles.

9. Notice of withdrawal must be given to the Circle Directors, but only so as to take effect at the end of the business year. Withdrawn or expelled members have no claim on the surplus reserve fund or other assets of the Circle.

10. The Circle shall acquire no liabilities, nor use, or part with the funds or assets of the Circle, without first obtaining the consent of the Manager of Co-operative Circles.

DOMESTIC EGGS.

1. Members must deliver all eggs produced by their own hens—home consumption, setting eggs, and accidentally found, small, or ill-shapen ones excepted—in the manner and on

CO-OPERATION AND CO-OPERATIVE CIRCLES

the days decided by the Manager of Co-operative Circles.

2. The eggs must be carefully collected every day, and in the hot season twice a day at least. Accidentally discovered eggs (stolen nests) must not be delivered. Artificial eggs only may be used as nest eggs, and the hens must be kept from the nest during the night.

3. Only clean eggs may be delivered, and these must be kept protected against sun, rain, and frost.

4. The members may only deliver eggs from their own hens. Transgression of this rule, leads to a fine of One Dollar for each of such unauthorized deliveries.

5. No eggs older than seven days may be delivered. Transgression of this rule, as well as the delivery of stale eggs, is punished by a fine of One Dollar and the actual loss to the Circle through delivery of such eggs. All fines shall become the property of the Circle. The Circle will be liable for any loss sustained through the action of members delivering stale or defective eggs, as aforesaid, and so'd by the Circle.

6. All deliveries of eggs are to be paid for once a month, at a price set from time to time by the Manager of Co-operative Circles, this price to be the best obtainable, taking into consideration the fluctuations and conditions of outside markets.

7. All deliveries of eggs shall be made to the point most convenient, and suited for selling, as directed by the Manager, or mutually agreed upon by the members, and the means of so delivering shall be provided by an arrange-

THE PERPLEX WAY

ment between the Directors of the Circle and the Manager of Co-operative Circles, mutually satisfactory.

BREEDING STOCK.

1. In regard to breeding stock, hatching eggs, and table fowl, the rules of the Circle generally as above shall govern.

2. Breeding pens, and their offspring, are to be properly housed, cared, and bred in accordance with instructions as these may be issued from time to time by the Manager of Circles. All birds offering for sale must pass inspection, and be proved as fit for the purpose for which they are intended.

HATCHING EGGS.

1. Hatching eggs must be taken only from healthy and vigorous birds, and must be delivered in good hatching condition, and in such quantities as the Circle may require; prices for birds and for eggs to be mutually agreed upon as the Circle may have, or find sale for same.

TABLE FOWL.

1. With regard to table fowl, members of the Circle shall give the Circle first choice, and stock must be graded according to the schedules which may, from time to time, be arranged, and in all cases it is understood that the best price obtainable shall be secured, and the output sold to the advantage of the Circle.

2. Notwithstanding anything heretofore said, every member shall be at liberty to retain such quantities of hatching eggs, domestic eggs,

CO-OPERATION AND CO-OPERATIVE CIRCLES

table fowl and breeding stock as shall be necessary for his personal use.

Subscribed to this

day of

191

.....
Manager of Co-operative Circles.

.....
Directors of Circle No.

CHAPTER XV.

CAPONS, ROASTERS AND BROILERS.

THE practice of caponizing is one old in poultrydom, but not very familiar to the poultry raising public of this country. In fact, it may be said that caponizing is new to the vast majority of farmers who make poultry raising a branch of their agricultural pursuits. The market for capons in Canada is limited, indeed we doubt if extensive caponizing would pay. True, where there is a demand, however, high prices are received, in fact higher than for any other poultry product, but to our mind caponizing does not prove a profitable venture in the hands of the beginner.

Capons, we state, for those unacquainted with the term, are castrated males, the operation being performed in order that the birds may grow large and fatten excessively. Birds upon which the operation has been performed change their habits, become inactive, and lay on considerable flesh, which is in consequence soft and tender. They grow considerably larger and thrive well in close confinement.

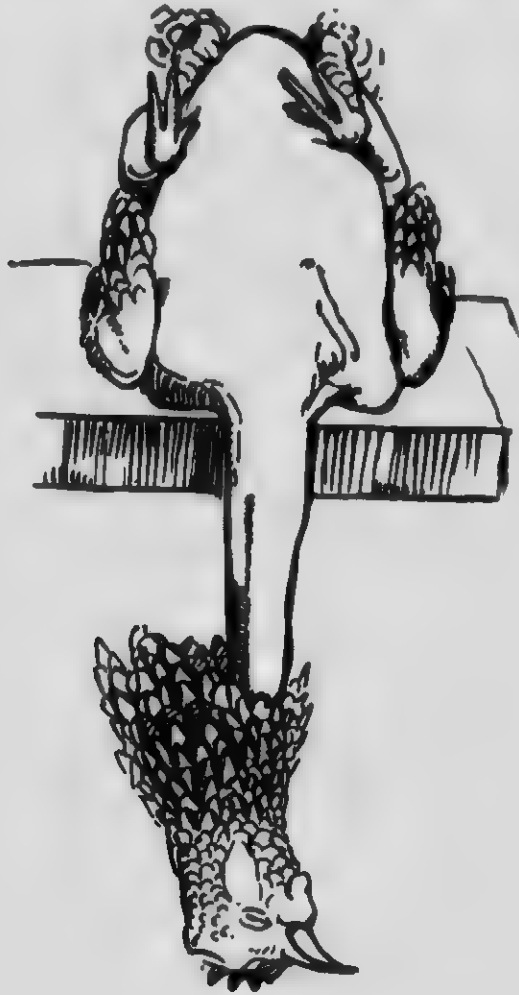
Instruments for performing the operation of caponizing may be purchased from any firm handling poultry supplies, and full instructions accompany these. We would never advise a novice to attempt the work upon his own fowls, because the loss through inexperience would soon eat up any expected profits.

ROASTERS.

The poultryman situated near the city or town who can successfully hatch early chick-

CAPONS, ROASTERS AND BROILERS

ens is afforded the opportunity of a profitable trade fattening and marketing what are known



A Roaster.

as roasters. Roasting chickens should be

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hatched in March, and hurried to maturity in much the same manner as broilers, hereinafter detailed, being ready for the May, June and July markets, at which season they will bring as high as thirty cents per pound. Roasters are especially saleable in the vicinity of the larger Canadian cities. Big fowl are the best to breed for roasters.

BROILERS.

There is something about the word broiler which is expressive of choice delicious eating, and undoubtedly broilers are the most palatable of poultry meats. A nice broiler chicken will satisfy the king of epicures, provided the bird is properly served.

To raise and market broilers is a special line of work, in which one is required to give considerable time and attention and the successful producing of which depends to an unlimited extent on the skill of the poultryman himself. Does it pay? If conditions are suited, market convenient, and one is experienced in other lines of poultry raising, broilers are very profitable.

First, then, about conditions—one must have vigorous parent stock to insure early, fertile eggs, and with the aid of incubator and brooder prepare to rear the chicks during the early spring, forcing their growth by using plenty of nourishing food, till they have attained the desired weight. It will not do to commence early hatching in an outbuilding, and then place the chicks in a brooder subjected to severe conditions of weather, and the location of which would prevent their having a good range of ground, the proper degree of warmth and essential feeds. Rather one must have an

CAPONS, ROASTERS AND BROILERS

artificially heated building into which the sunlight penetrates, and into which also a constant supply of fresh air may be admitted. The floor



A Cramming Machine for Fattening Poultry.

surface should be littered with fresh earth, preferably fine sand.

What breed of birds are best adapted for broiler raising is a question that cannot be

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definitely stated, as different varieties have been found suitable by certain persons and condemned by others. Our own experience has been that the White Wyandottes, Buff Orpingtons and Barred Rocks made as good broiler chicks as any breeds we have tried, and therefore personally we recommend them.

Immediately after hatching, broiler chicks are treated in the same manner as is set forth in the chapter on Preparing Fowl for Market. Give them no food for thirty-six hours after their removal from the incubator. The first feed should be a quantity of fine grit, together with fresh drinking water.

Commencing the next day, the chicks may be given a ration of rolled oats and finely cracked corn, mixed with hard boiled eggs, all chopped fine, and in which has been sifted a few spoonfuls of charcoal. Occasionally sift in greens. Place milk before them for drinking. The above ration, fed at least six times per day in quantities that the chicks can clean up at one eating, may be continued for a week.

During the second week alternate the above ration, fed as often, with a slightly moistened—not wet—mash of corn meal and wheat bran, mixed with hot water and well seasoned with salt and pepper. Mix in a quantity of meat meal and fine grit, not forgetting the greens, and plenty of milk or water.

By the time the third week has arrived the development of the chicks should be quite perceptible. A mash may now be made of two parts flour, two parts corn, one part bran and one part crushed wheat, mixed with milk. In the mash place meat meal and greens on alternate days, and give the chicks throughout the next four weeks all they will eat. During the

CAPONS, ROASTERS AND BROILERS

last week cotton seed meal may be mixed with the mash.

At the end of eight weeks the chicks should be ready for market and weigh from one and one-half to two pounds each. During the months of January, February, March and April they command almost any price.

CHAPTER XVI.

HOPPER FEEDING.

OF late years considerable attention has been given to the method of dry hopper feeding. Its advantages are a saving in labor and it is a preventive against the chicks filling up too quickly or gorging themselves. More or less food is, of course, wasted by being thrown on the ground, thus attracting birds, squirrels, rats and other vermin.

However, the saving in time amply compensates for this loss. The chicks cannot overfeed themselves, more especially if accustomed to the hopper system from the start. They cannot do so on the meal portion at any rate, and are not inclined to on the whole grains, preferring to forage for green stuffs, bugs, etc., taking only what grain they need from the hopper.

A hopper should be large enough to hold at least half a bag of each kind of grain or meal food that is used, otherwise it is quite a task to keep it replenished. Note our illustration and measurements, both for adult fowl and chick hoppers.

The hopper feeding system is ideal where there is little rainfall, but where inclement weather necessitates keeping the fowl indoors for any length of time, lack of exercise would soon be quite apparent if no other method of feeding was used. Hoppers in rainy weather must be kept under cover, and it is advisable to have them sheltered always, whether in dry or wet season.

Indoor dry feeding does not necessarily mean that all food should be given in hoppers. With

H O P P E R F E E D I N G

birds of the American or Asiatic classes hopper feeding to the exclusion of other systems would not be satisfactory because lack of exercise would fatten them excessively and injure their laying qualities. The Mediterraneans will do with little exercise in confinement, yet lack of something with which to divert their attention:



Hopper Feeding.

has a tendency to develop bad habits, such as egg or feather eating.

Hence it is that we advise hopper feeding as an auxiliary to scattering grain in litter, and when used in conjunction with one another, these systems produce profitable results.

CHAPTER XVII.

EGGS.

AN APPRECIATION.

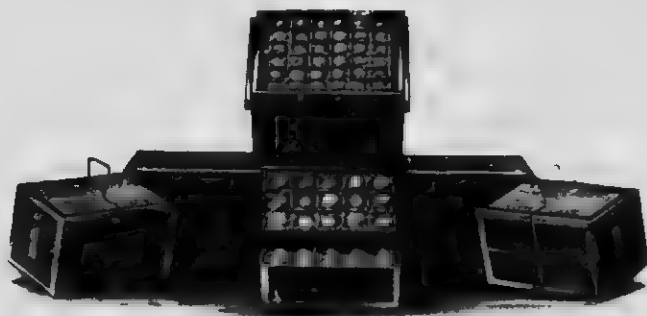
TO the majority of persons an egg is simply an egg—nothing more. Being a commonplace article in appearance, the general public view it as something for their use, good to eat, but not deserving of much notice. Eggs have been eggs, they are to-day, and will be to-morrow, so what more thought are they worth? Thus the subject presents itself, and thus it is generally dismissed.

However, so great is the value of eggs as ingredients in cookery combinations, and so general is their use, that one hardly ever partakes of a meal without eating of them. Furthermore, did you ever note the persistency with which physicians prescribe eggs for their patients, no matter what the nature of the sickness? Eggs as a nourishment cannot be equalled. And when we consider that the egg is produced on almost every farm, that it is put up in the handiest package that ever product was delivered in, and that there is just enough in one package for the average demand of a meal, we can then begin to see a little of the superlative value of an item in our daily life, so common that it is seldom thought of as a thing to be thankful for, except when we find it lacking.

So much for the egg from the domestic viewpoint. Man has made an egg a staple article of commerce, but go to "her" who gave it to us, and ask if there is not another reason for the existence of the egg. She will tell you that her main intent in the filling of the nest is to

bring forth a brood of youngsters that will in their turn grow up to lay more eggs and hatch more chicks. Perpetuation of the race—that is the idea of the hen, and in the reproduction of genus avie the egg is surely wonderful. To our mind it is one of the most interesting and also complicated processes operating in the world to-day. While we realize that commenting upon the question here will not make it much easier to understand, because its mysteries have defied science from ages past, yet every prospective poultryman should have an idea of the formation and maturing of the life snugly ensconced beneath the shell of the fertile egg.

In the hen's body the formation process of the egg goes on from day to day. Her vital forces are concentrated on furnishing the required essentials, which she abstracts from what is supplied her in the shape of food. For the yolk, which is the first part secreted, fats are required. Completely formed and enveloped in a membranous covering or sack, the yolk slips from its place down into the oviduct.



Clean, Fresh Eggs in Attractive Packages Command High Prices.

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where the white is secreted and shaped about it. To correctly proportion the white of the egg protein foods are needed. While the yolk and white—a living mass of protoplasm—are in the oviduct, the hard calcareous shell forms around them, and in due time the whole is expelled from the hen's body. The minerals consumed as feed supply the material for the shell of the egg.

The development of the chick in the shell is a work of interest. Before the egg is laid development of the germ has really to an extent commenced, and perhaps the most wonderful thing about an egg is the power it has of suspending this development, after being laid to be resumed again, when the required degree of heat is applied to its surface. Of course, if after having lived its natural time the egg is not incubated, the life organism in it will die.

The egg and its composition are difficult to understand, but their real greatness in Nature's workshop are certainly worthy of man's best appreciation.

CHAPTER XVIII.

PRODUCTION AND MARKETING OF EGGS.

IT is not an uncommon saying that the marketing of goods is as difficult as the making of them. Inquiry, among manufacturers and merchants, will confirm this statement, yet investigation of the poultry situation, in any country, and more especially in our own, reveals a different condition, as there is always a waiting and favorable market. There is a growing demand for eggs, and the assurance of a profitable trade is awaiting every poultryman who will take the trouble to supply a high class article. The easiest money to be made is the margin of profit received for a quality of eggs just a little fresher than the ordinary.

The time has past when we should be content with selling eggs that are simply eggs, and nothing more, for a few cents per dozen, or in trading at the village store for a low price. Why not go after the big profits to be found in superior marketing? If calculated, a few cents per dozen more for the annual production of a hundred fowl is a clear profit worth getting after.

In winter, eggs are scarcest. In summer, eggs are more plentiful. In winter the price of eggs is highest. In summer the price of eggs is lower. Therefore, to be the most successful in commercial egg production we must so care for our flocks that they will give results during that season of the year when most desired. To have pullets in laying condition they should be April and May hatched, and be given free range during the summer, to-

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gether with the right proportion of feed. Unless fully matured before the cold weather sets in they cannot give satisfactory results. Select only active, vigorous pullets of the low-set, deep breasted type, with broad well rounded head. Avoid the long leg, flat head or lack of symmetry, as these are invariably indications that the bird lacks constitution and breed characteristics. Pullets for winter

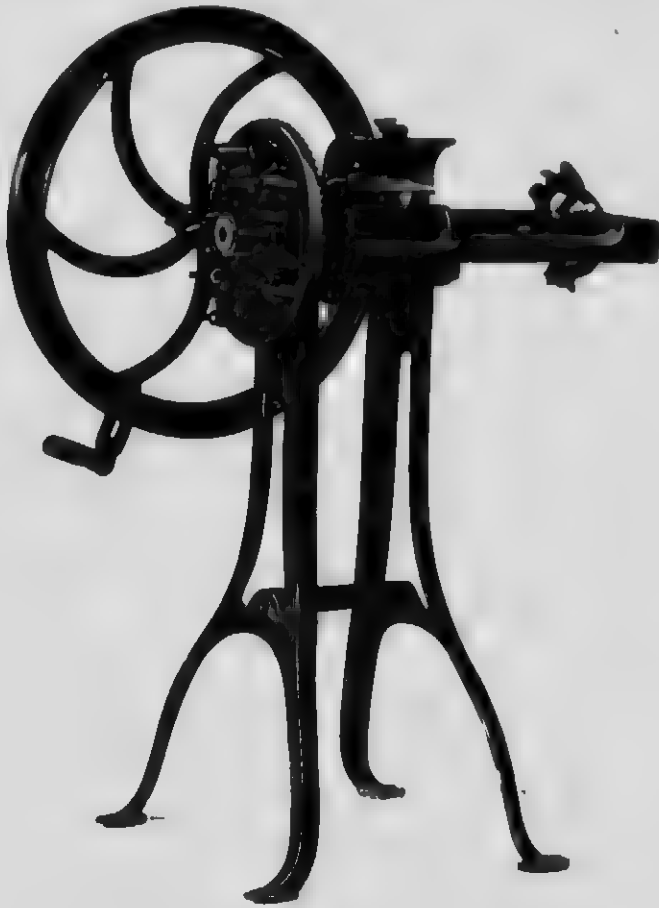


Humpty Dumpty Crate. Capacity 12 Dozen Eggs

laying should be housed in their winter quarters early, that is before there is any severe change in the weather, and for the first few days after their removal they need considerate looking after, so that they will not become uneasy and restless, but instead will settle down to their new home full of good intentions and determined to earn their keep twice or three times over.

PRODUCTION AND MARKETING OF EGGS

In feeding for winter eggs the rations elsewhere given in this book may be used, and there is every reason to hope for satisfying



Bone Cutter. Ground Bone Increases the Egg Yield.

results therefrom. The writer knows that they contain the ingredients essential to the prolific production of winter eggs, and we have,

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further, as a gauge, the result of our own experience. The local cost of different grain varieties will determine, in the majority of cases, what should be fed; it is of course preferable to feed a number of different grains because the variety in itself is beneficial. Good quantities of fresh drinking water must be constantly supplied, and if procurable supply skim milk, when possible. Green foods such as clover, raw cabbage and turnips have high feeding values and must be given. Oyster shell and also meat, either raw or scraps, or in the form of ground bone are necessities.

The poultry house must be kept clean always, so also, the birds must be free from vermin. See that plenty of fresh air is admitted to the poultry house and never allow the entrance of dampness or moisture.

Now, about the eggs themselves, be sure they are fresh. Gather daily and market frequently. Do not send dirty eggs to market. Try and have the eggs of a uniform color and size, and the way to achieve this end is by keeping one breed, and that good.

Eggs are usually packed in wooden cases, each holding thirty dozen each, the cases being divided by pasteboard partitions into separate compartments, a compartment holding one egg. A packing case which has come into general favor of late years is known as the "Humpty-Dumpty," consisting of a frame, as shown in illustration also, in which the trays are placed. It is a convenient arrangement, holding twelve dozen eggs, and may be carried by hand. An attractive case, has very often, much to do with fixing the

PRODUCTION AND MARKETING OF EGGS

price of the products and the person who will take the trouble to prepare a neat case for his own use—these can be bought cheaply—of cardboard nicely labelled, may be depended upon to be equally careful about the quality of the goods in it, and buyers seem to instinctively know this. Good eggs are worthy of a good packing case, and the increased selling price will soon offset the required outlay for the purchase of it.



Regular 30 Dozen Egg Case.

In marketing eggs, endeavor to sell direct to the consumer. Such a system we call working up an egg trade. The high prices can be obtained, and the largest profits are made, by having an individual or retail egg trade. It is an easy trade to get and a satisfactory one to serve. Hundreds of families in every town, and thousands of householders in every city, are looking for the person who will furnish eggs regularly, generally every week, the

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year round, and are always willing to pay a couple of cents per dozen above the ordinary prices. When one satisfied customer is secured that person will recommend you to some one else and so the trade grows. Poultrymen who can reach summer resorts, and those who live in communities where summer boarders are taken have a good opportunity to secure a big price even during the poor season. Large hotels, restaurants, hospitals and sanatoriums frequently will pay quite as much as a private trade, and there is the advantage that greater quantities are required.

The poultryman who supplies fresh, clean, uniform eggs will always find his product in demand, and by producing only a first class article can command ever increasing prices.

CHAPTER XIX.

PRESERVING EGGS.

NO doubt a number of those who read this book will desire information with reference to preserving eggs. Quite an extensive business is done in this special line of work, and of late years there has been a marked development of the preserved egg trade. The system is to take in a supply when they are cheapest, and by various methods preserve the eggs, then obtaining a price within a few cents of the strictly fresh article.

In preserving eggs properly it is positively necessary that they be absolutely fresh when placed in the solution. It is also preferable that non-fertile eggs be used because if the process of incubation has started at all the eggs cannot keep, and seemingly the germ of the fertile egg will start to decay after a time even in the best preservative.

One of the most commonly used solutions is water glass (silicate of soda), the ingredients for which may be purchased at any drug store. The mixture proportion is one pint water glass and nine parts boiled water. Wash the eggs and place them in a stone jar, then pour the solution over until they are completely immersed. Cover the jar and keep in a cool place.

Another preservative, which has been used with fair success, is made of lime water and salt. In four parts of boiled water mix thoroughly one pound of quick lime and one-half pound of table salt. After shaking and setting the clear solution is drawn off. Eggs are

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washed and placed in a stone jar, and then completely covered with the solution.

We could not state definitely what length of time either of the above given solutions will preserve eggs. They have been known to keep them in perfect condition for ten months, but the average requirement is never for more than half that time.

Other methods of preservation, such as wrapping the eggs in paper, glycerine and acid solution, rubbing with dry salt, vaseline, paraffin, etc., cannot be relied upon, although a certain measure of good results have been obtained therefrom.

CHAPTER XX.

FANCY BREEDS.

IN this chapter is given what the editors desire earnestly termed an impartial description of those breeds of poultry which come under the above opening heading. There can be no clear cut definite major or minor division of fancy breeds, more than there can be an infallible classification of the utility or general purpose fowl. There is variety in opinion, just as there is variety in the birds, but we feel justified in saying that the fancy breeds, as we know them, are not suited to the requirements of the farmer poultry raiser, nor to the man who wants to take up practical poultry work for profit. Fancy breeds demand skill and study in the handling, and even then their useful qualities are limited in development, whereas those breeds termed utility type, provided they are given equal time and attention, will show greater results by far in services rendered. The fancier and the exhibition man take pride in the fancy breeds and the numerous characteristics of the different types afford scope for keen competition and much interest.

POLISH.

The Polish are a handsome fancy breed of fowl. While the name, Polish or Poland, reminds one undoubtedly of the country of that name, this variety did not by any means originate there. As a matter of fact, the birds in question are not specially known in Poland more than in other localities over all the continent of Europe and Southern Asia. The best authorities on the subject agree now that the

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name probably had reference rather to the peculiar poll, or elevated crest, just back of the nostrils on the top of the head, where there is an elevation in the bony structure. It was therefore suggested to substitute the name Polled fowls.

The most conspicuous characteristic of the Polish fowl is the very large crest which adorns the head of both sexes and makes their appearance beautiful and striking. However, nice as



White Crested Black Polish.

these crests may appear from an ornamental point of view, they have their serious drawbacks regarded from the standpoint of the practical poultry raiser. In stormy weather these crests are liable to become wet and to cause inconvenience to the fowl as well as to make them more liable to take cold; they also obstruct the sight of the birds to some extent and make them a prey to hawks.

The poultry-keeper who desires to realize the

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greatest profit from the production of eggs, or meat, should not keep this breed, anyway not in a promiscuous flock. The fancy breeder, on the other hand, who will breed the Polish fowl in small flocks and will pay special attention to their delicate constitution by protecting them as much as possible from the snow or rain will always find them satisfactory. The fact that they do well without having the opportunity of a large and wide run makes them especially adapted for the fancy breeder in cities or towns, where poultry houses and yards are usually of limited proportions.

The varieties of Polish known to fanciers are rather numerous, but only three are generally seen at shows—the White-crested Black, which have wattles but no beard, and the Gold and Silver-Spangled varieties, which have instead of wattles a full beard or muff under the throat. The shanks of all varieties are of a slate or bluish color, and the skin is white.

GAME.

The real origin of the Game fowl cannot easily be determined, but it is certain that varieties of Games have been bred for centuries—back in the days of the Romans.

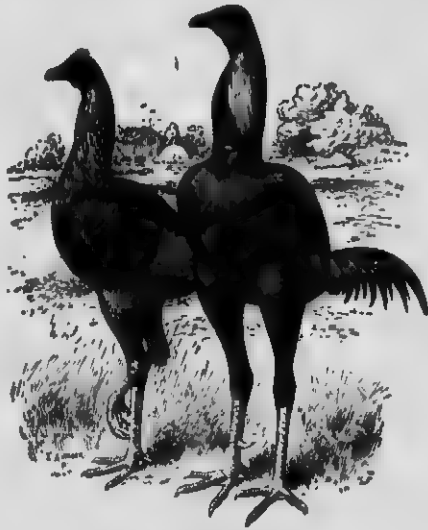
The varieties of Games cannot very well be regarded as general purpose fowl. They are of a decidedly pugnacious disposition and extremely poor layers. Their flesh, however, is of such a fine quality that this circumstance alone may justify in some cases their presence in a general farm poultry yard. They are also usually good sitters and good mothers.

With regard to the Pit Games it is sufficient here to state that they are short-legged, compact, stout fowls with an abundance of tail

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feathers. They do well in almost every climate and mature early. Many poultry raisers do not place these Pit Games at all among the standard varieties. We must, however, maintain that their general characteristics are quite as distinct as are those of the so-called standard breeds.

The Exhibition Games—as indicated by their name—are bred chiefly for exhibition purposes, and the great number exhibited at the poultry



Black Breasted Red Games.

shows and fairs testify fully to the popularity of these fancy fowl. They are taller but not so compact and strong as the Pits. The most popular of the eight recognized varieties of the Exhibition Games are the Black-breasted Red and the Brown Red.

The Oriental Games are the finest varieties of the Game fowl. They are much heavier than either the Pit or Exhibition Games and are par-

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ticularly strong in the shoulders and thighs. If crossed with other breeds of fowls, the Oriental Games will invariably infuse vigor in such breeds and will considerably improve the quality of the flesh. The Cornish and the White Indian Games are the most popular of this class; they are especially liked on account of the delicious quality of their meat. Less popular breeds of Orientals are the Malay and the Sumatra Games.

SILKY.

On account of the peculiar appearance, the Silkies have attracted the attention of fancy breeders, this more especially in the British Isles, where strange looking fowl are in considerable favor up to the present day. The preference which Canadian poultry raisers give to the general-purpose fowls has prevented the breeding of Silkies to any great extent in our country.

The most characteristic point of the Silky race is the fact that their feathers are not webbed. They stand well out from the body in all directions and the whole plumage has a soft, flossy and loose appearance. The skin of these birds is a deep, violet color, almost black, and the surface of the bones is the same. Their irregular rose-combs, faces and wattles show a deep bluish or livid color; the legs also are of a bluish purple and are five-toed and feathered. This prevailing dark color of the non-feathered parts of the body is the more apparent as it is in marked contrast to the Silkies' white feathers and crests.

SULTAN.

These pretty fowls were brought from Constantinople to England about sixty years ago, and considerable time elapsed before they also made their appearance on the American Continent, and especially in Canada.

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Their flowing plumage is of a pure spotless white; they have a very fine crest on the head, are muffed. have a good flowing tail, short, well-feathered legs, and five toes upon each foot. The brilliant red comb and wattles are very small. The Sultans are about the size of the Polish and also resemble these fowls generally on account of their compact crest and with regard to their tame disposition and readiness to become pets. The average weight is about four to five pounds for the cock and three and a half pounds for the hens. They eat very little and are good layers. However, they can hardly be classified amongst the useful fowls, but are reared chiefly for their fascinating appearance. Fancy breeders in cities derive pleasure from the rearing of Sultans, because they thrive in small enclosures and have quaint little ways and habits.

FRIZZLE.

The Frizzles are originally an Asiatic race, but at the present time have spread so widely that they may be found in nearly every part of the world. They are sometimes confounded with the Silky fowl, with which they have, however, no connection whatever.

The peculiarity of this breed is in the plumage, every feather being curled back in the wrong direction, as if the bird had been roughly stroked the wrong way, and presenting a grotesque appearance. The curve is most pronounced in the hackle feathers and feathers of the back. The tail-feathers are not, of course, thus recurved, but the webs are loose and disconnected. While birds of any color are recognized in this race, the most usual color is white. Their legs are short and dark colored. With regard to

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the combs one may find birds presenting neat rose-combs as well as such with single combs.

On account of the peculiarity of their feathers the Frizzled fowls have the general reputation of being delicate and rather susceptible to cold and wet, and this delicate disposition prevents them from being anything but fancy fowls. Their white and exceedingly tender meat and the smallness of their bones make them excellent for the table. Although at present they are not bred extensively, it can hardly be doubted that they might be made more useful if skilled breeders would give them more attention.

BANTAMS.

The diminutive breeds which are denominated Bantams have always been popular among poultry raisers, although they cannot by any means be classified amongst the general-purpose fowl. All the different varieties of this race are purely fancy, or ornamental birds. Generally, they are of a very tame disposition and are therefore often reared as children's pets.

Many of the Bantams are very good layers and are excellent table fowl on account of the fine quality of the meat. The cost of their maintenance is very low as they are content with small meals. They can be kept in small places and in neighborhoods where no large variety of fowls could be kept at all.

If Bantams are bred for exhibition purposes it should be remembered that the smaller the size of the birds the higher they will be prized. The plumage and form should closely resemble the corresponding varieties of larger fowls. There are a great many different varieties of Bantams, the most common and popular of them are the Black, White, Buff, and Partridge

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Cochins; Dark and Light Brahma; Golden and Silver Sebright; White-crested and White Polish; Buff Laced, Japanese and many varieties of Games.

DORKING.

The origin of the Dorkings is very difficult to determine. They are certainly one of the oldest of domesticated breeds in England, and all probabilities point to the conclusion that these fowls were introduced there by the Romans. Their breeding has been brought to such a high standard of perfection, that by some poultry raisers it is said that the Dorkings of to-day are almost ideal for general purposes.

They do well on almost any dry soil, but are somewhat delicate in very cold climates and if subjected to dampness.

The Dorkings are excellent layers, and as sitters they are among the best, not only persistent and careful in hatching, but also brooding their chicks longer than any other hens. It is, however, as a table fowl, that this breed shows to good advantage. Their light-colored and juicy flesh is often regarded as superior to that of the French, or even the Game fowls. The farmer who requires poultry chiefly for the market will appreciate the fact that the Dorkings have a natural aptitude for putting on and keeping fat, and that the small proportion of bone makes the bird appear more shapely, and increases the weight. The poultry raiser in the city, however, may raise this breed with similarly good results because the Dorkings thrive in confinement, and on a small run will do almost as well as on a wide range.

One of the prominent characteristics of this breed is the fifth toe, which some poultry men

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hold responsible for the frequent occurrence of "bumblefoot" amongst them. They have comparatively short legs and a compact, broad, low-set body. There are now three acknowledged varieties of the breed; the White, the Silver-Grey and the Colored Dorkings being distinguished one from the other by their color. The combs of the White Dorkings are rose, those of the Silver-Grey and Colored are single. The standard weights of these fowls are $7\frac{1}{2}$ to 9 lbs. for the cocks and 6 to 7 lbs. for the hens; the birds of the colored variety are the heaviest.

HOUDANS.

The interest taken in French fowl in this country, that is fowl originally from France, is considerable. There are different varieties of French breeds that have made their appearance in Canadian poultry-yards. The most popular of these French varieties is undoubtedly the Houdans.

This breed may be considered as a general-purpose fowl, which has to some extent been developed first on one point and then on another intermittently. Houdans are not only extraordinarily hardy, but are excellent layers and if well handled furnish a fine quality of juicy flesh. The little chicks grow very quickly, feather and mature rapidly. Many of them are fit for the table when only four months old, attaining a weight of about $4\frac{1}{2}$ pounds when dressed.

The Houdans may well be regarded as one of the finest races of fowl. They have a bulky appearance, their plumage is black and white spangled; crest and beard are of the same color, the crest should be round and not divided at the top. While these two ornaments are well developed in both sexes, the peculiar triple,

THE PEEBLES WAY

V-shaped comb is especially an attribute of the male birds, whereas the comb of the hens is scarcely perceptible. The legs are strong and of a lead color, with five toes, the two hind ones one above the other. The eggs of the Houdans are very large and of a pure white color. It is seldom that the hens show the least tendency to become broody. They may be kept with the same good results in small enclosures as on large



Houdans.

runs, where they can forage to their own delight. The weight of the cock should be 7 lbs., that of the hen 6 lbs.

The Houdans have also been used to produce various crossings, and it may be mentioned that those with Brahmas or Cochins have made capital fowls both as layers and for the table, maturing remarkably early.

The other French breeds, which now and

F A N C Y B R E E D S

again are met with in this country are the Creve-cœurs, the La Flèche and the Faverolles. However, none of these have attained the popularity of the Houdans, which have become a familiar sight in the Canadian farm-yard.

INDIAN GAMES.

The fowl known by this name and generally represented by the two varieties of the Cornish and the White, are undoubtedly bred originally



Cornish Games.

from Indian importations and resemble in some points very strongly the Malay type.

Although they must be considered profitable fowl, their quarrelsome disposition makes this breed altogether unadapted to the purposes of the ordinary poultry-keeper. The young cock chickens often fight for whole days consecutively, only leaving off with darkness, and resuming hostilities as soon as there is a glimmer to see by.

Their light and active grace, the singular

THE PEELESS WAY

beauty of color, and their free step give the Indian Game fowl a very attractive appearance. They mature rapidly and are excellent layers, averaging as high as 200 eggs per year on a good range. All Game fowls, if killed moderately young, are the choicest eating possible. They will not bear fattening, but if taken up just as they are, after good feeding, are almost like the pheasant in quality of flesh. The hens are good sitters and take excellent care of their young brood. The fact that they are very alert makes them a somewhat difficult prey for hawks.

The Games look rather small, compared with most other poultry, being, however, close feathered and very muscular, with well-developed thighs, they are usually heavier than they appear. The cocks average 9 lbs., and the hens 6½ lbs.

CHAPTER XXI.

PREPARING BIRDS FOR THE SHOW.

TO produce high class birds and exhibit them in proper show condition requires special care from the time the eggs are incubated and hatched, and even before that as well. The chicks must grow steadily and rapidly until they are fully developed and later the fowls must be specially prepared. The final preparations for the show room are only secondary to the previous development.

For those so inclined there is no branch of the breeding of poultry as exhilarating as mating fowls for exhibition specimens, watching the chicks grow day by day, selecting the future winners in your mind, and then seeing your expectations become actual realities in the show ring. The development of procuring of exhibition stock is something every poultryman must learn for himself. The premier essential is to become thoroughly familiar with the standard requirements and bring the birds as nearly to the idea as possible. The first time one attempts the work of exhibiting he may surprise even himself. But win or lose never become discouraged. Experience is a splendid teacher.

And in this regard a little advice we have to offer is, do not tell the whole neighborhood positively you are going to win. If you fail it is then hard to explain the reason and people lose faith in your judgment. Unfortunately many promising recruits are lost to the fancy by over confidence and inability to recognize a better bird than their own.

In this chapter we do not propose to enter

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into a discussion of the much talked of faking and doctoring, which unfortunately attends the poultry exhibit of many shows. Talking about the matter can have no good effect; rather there must be awakened in the hearts of the poultry fanciers themselves generally, a spirit of honesty and uprightness, which will eventually crush out and drive from the arena the fakir and unfair winner. The appointing of judges who will cut and disqualify the doctored bird would be a step in the right direc-



At the Show.

tion. In Canada happily we are not, as yet, bothered to a great extent by the real dopest, but we must be on our guard, for as the industry grows opportunity will be afforded for his entry here.

When the birds to be exhibited have been selected they must be taught "show room ethics" in other words, familiarized with the coops and handling, by being placed in and out of them constantly for a time. Birds not

PREPARING BIRDS FOR THE SHOW

treated in this manner will be nervous and fretful at the show and the judges cannot give them fair scoring for they will be down or try to fly away and will not set forth to advantage either their shape or carriage. A little training will allow you to catch them, put them in and out of the coop, as the judge will desire to do, at the show. Training the birds in this fashion will help materially to give them a better chance in a hard competition.

Thorough washing and the proper subsequent treatment will improve the appearance of almost every fowl. About three days before the show they should be washed with soap and water, taking care not to injure the feathers, and rinsed well. Place the bird in a tub facing the operator, and hold it firmly, so that it will not flap its wings, and with a sponge squeeze the water over the feathers, rubbing in the natural way. Soap the sponge and rub the suds well in. The first two tubs should be of warm water, the last cool.

Dry the feathers by squeezing the water from them, as much as is possible, then wrap the bird in towels. Finally place near a stove (but not close enough to make the feathers curl), and fan well underneath the wings and body.

Before the bird is placed in the tub, its legs should be washed with soap and water, using a brush and pointed stick to clean out the scales. The beak and wattles may be rubbed with equal parts sweet oil, brandy and whisky.

A drying or fluffing pen may be used instead of placing the bird near a stove to dry out. Such a pen may be made from an or-

THE PEBBLESS WAY

dinary good sized packing case. Arrange a wire netting and roost in box and at the bottom set a coal oil heater. The washed fowl is set on the roost and the even temperature dries the feathers out uniformly. When perfectly dry, a bird so prepared, should be allowed to remain in a clean pen where there is no opportunity to scratch up dust from chaff or other litter. It is then ready for the show, and the work entailed is more than repaid by the satisfaction one feels if lucky enough to see the blue ribbon tacked on your coop.

CHAPTER XXII.

LICE AND MITES.

NEXT to a disease (and in fact they may be treated as a disease) among the enemies of poultry, we find lice and mites most troublesome. These parasites are the result of filth, and dirt, practically nothing else. And unless the poultry house receives regular attention lice and mites will spread and multiply with surprising and alarming rapidity.

Lice and mites are not both the same as is commonly believed. Lice will remain on the body aggravating and irritating the skin. They do not seem to leave a bird once on it. Their food is the loosening skin and the flesh at the quill root. By constant clawing and scratching to loosen pieces of this they so irritate the fowl as to eventually make them sick. The worst of the lice are found in the fluffy feathers and about the tail.

These are often responsible for infertile eggs causing an indifferent attention on the part of the male bird to the birds affected. In chicks the lice attach themselves to the head and will eventually kill the chicks if not looked after.

There are several effectual treatments to rid fowl of lice. Applying oil or lard to the body of bird is to be recommended. This method closes up the pores and prevents the parasites from breathing resulting in suffocation. Especially is the oil treatment preferable in the case of young chicks. Place a few drops on the head, at the back of the neck, under the wings and here and there about the body.

THE PESTLESS WAY

The dust bath is a natural method of not only curing, but also preventing the accumulation of lice on fowl. Place ordinary road dust in a deep box and have the birds wallow in it. Powdered sulphur or tobacco dust sprinkled among the feathers will be found efficient.

In another chapter is given, in detail, a process for thoroughly cleansing the poultry house and fixtures of lice. One cannot be too particular about keeping vigilant watch so as not to allow them to get possession.

Mites are smaller than lice, and different in that they suck the blood of the bird, and depart when full. Mites are a worse enemy of poultry and despite the meagreness of their size each can take an appreciable amount of blood from a hen in the duration of a night. Furthermore the presence of the mite disturbs the fowl when it should be resting free from annoyance.

In the cracks and crevices, walls, rests and perches, and under droppings that have remained any length of time, are the breeding places of mites. To stamp them out sprinkle the whole interior of the poultry house with coal oil or carbolic acid, placing an especially liberal quantity on the nests and roosts. It would be advisable also to fumigate, as instructed, for the eradication of lice, and do not discontinue the process of disinfection until every one of the pests has been removed.

CHAPTER XXIII.

ENEMIES.

BY enemies of poultry, we mean those depredators, who seek to destroy either through a desire for food or mischief. In the category may be listed cats, rats, mice, weasels, skunks, minks, hawks and crows.

Rats are probably the most common, and the most destructive. They prey upon both eggs and chickens, and if the poultry house is constructed so that they are able to burrow into it, their extermination once they obtain a foothold may prove a perplexing problem. A cement floor is rat proof and if for this reason alone should be adopted.

If ordinary methods, such as putting chloride of lime down their holes will not drive them out, then it will be necessary to set traps, being careful to not place these where the fowl would get caught. Rat poison may be used, and if so cover the holes in which the poison is placed so that the birds cannot have access to it.

Mice will not touch the chickens or the eggs, but they will steal food and gnaw the floor and walls with damaging results. A pail or tub, half filled with water, and food placed in it makes a good mouse catcher. They will invariably jump into the receptacle and of course drown.

Minks, skunks and weasels are animals of prey, and sneaking around the premises at night, they kill off and carry away the chickens. Traps are the most successful means of hunting them, and a good plan is to bait the trap near the poultry house with a dead

THE PERILOUS WAY

chicken. Always make certain that the trap is in perfect working condition in order that the victim will have no possible chance of escape.

Either of the three are extraordinarily sly and their cuteness enables them to work havoc despite the most precautionary methods.

Cats are of course enemies of only the small chickens. They will stealthily swoop down on the flock and grabbing one between the jaws race away to devour the morsel at leisure. Where there are cats it is necessary to be vigilant. If the cat is your own you surely know what to do; if it is your neighbor's you will have to decide.

Hawks and crows have a two-fold object when hovering over a flock of birds, the primal being to steal birds, the second to steal grain, if convenient. They visit the yard about the same time every day, in our locality their calling hour being between one and three in the afternoon. We have found that a gun is the only sure remedy, and as an attendant is always in the field with the chicks the hawks and crows have not been very successful.

CHAPTER XXIV.

THE POPULAR BREEDS.

IN the classification under the above head our endeavor will be to include all breeds which are to-day favorably known, either as meat producers or egg layers, or as a combination of both, and essentially utility in type. To make a specific and very definite subdivision of the popular breeds, and classify these minutely would be a task fraught with difficulty, and no matter what form the classification might take, or what the explanation therefor offered was, we realize that no unanimous decision would record our labor as being minutely accurate, because the variation of the fowls themselves, and the difference existing in conditions, and in feed and care, allows scope for breeders to honestly differ in their opinions relating to the usefulness of, and the results to be obtained from different breeds. In certain sections of the country favor may run strongly towards one special egg breed because in that particular locality poultrymen have been very successful in the egg results obtained from it, while another section of the country would sing loud the praises of the breed referred to as being not only an egg producer, but also a general purpose fowl, suited for marketing as well as egg laying. And so it happens, birds are classified, and quite correctly too, in different grades or subdivisions, for reasons peculiar to the individual breeder.

One man from long acquaintance with a special breed will insist that his choice is not only the most satisfactory, but the most practical for all purposes. He becomes infatuated

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with the good qualities of the breed and refuses to recognize its weaknesses or defects. This is natural; it is human.

There is, however, a distinct difference between what are termed the popular breeds and what are known as the fancy breeds, the classification of which we will make, we trust, sufficiently broad and also comprehensive.

In passing, it occurs that the amateur will look for an answer to this question—what breed do you, speaking from experience, recommend as being the best? The query is pertinent, certainly, but the reply difficult of answer because there confronts us from which to select a record of profitable satisfaction derived from the handling of several different breeds. To name one of these in preference to another we cannot in fairness do, no matter how carefully the situation is studied and summarized. There is, we have found, good in every breed, if you are able to intelligently discover it, and according as the circumstances of your especial case may require, develop and extract the stronger feature, the result of previous experience helping you decide which, to you, is the most beneficial and what particular breed will produce the most remunerative results.

We can unhesitatingly, however, speaking from observation and experience, recommend the Plymouth Rocks, Wyandottes, and Orpingtons, adding to the list Minorcas, Leghorns, Langshans, Rhode Island Reds, Brahmas and Cochins. From them we suggest that the beginner select the breed which personally appeals to him, enter into the study of it, and if good stock, and by good we mean standard bred, healthy and vigorous birds, or good eggs, meaning strongly fertil-

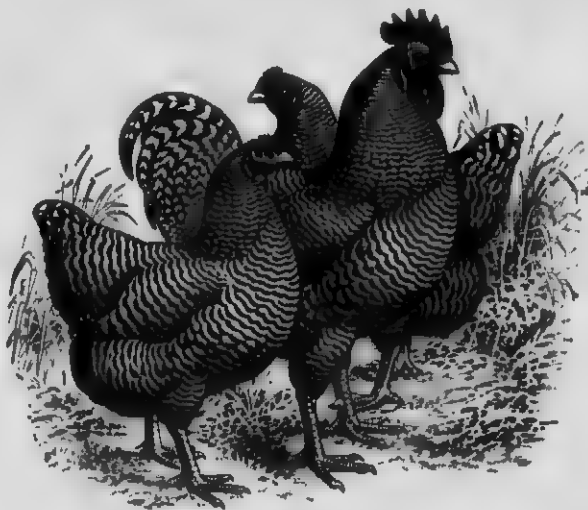
THE POPULAR BREEDS

ized eggs, have been secured, there is every reason to look forward to the future full of hope and confidence.

The first three breeds, the Plymouth Rocks, Wyandottes, and Orpingtons, are noted for their adaptability to varied conditions, and their willingness to give a nicely shaped good sized egg, as well as having a body correctly proportioned and meaty for table use. They mature quickly, and are hardy, both of which characteristics are most important. With ordinary care and attention they are easily domesticated, and will always respond to good treatment.

PLYMOUTH ROCKS.

Practical in size and shape, meaty, and strong on egg production, this breed of birds has



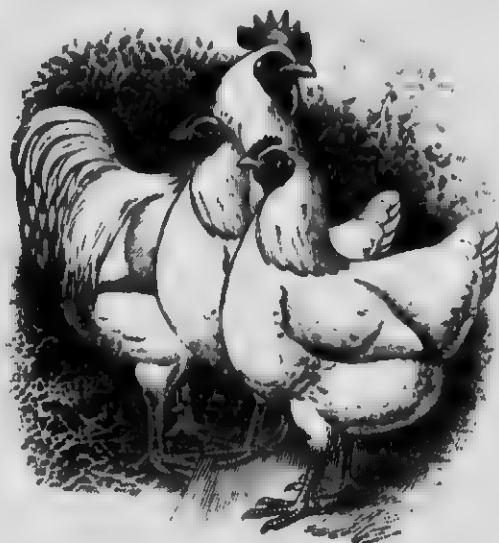
Barred Plymouth Rocks.

steadily, since its origination, advanced in usefulness and popularity. Progress is being made

THE PEEPLES WAY

in a more exact knowledge of their characteristics, and even better results still may be expected. The cock, standard weight, is $9\frac{1}{2}$ lbs., hen, $7\frac{1}{2}$ lbs.; cockerel, 8 lbs., and pullet $6\frac{1}{2}$ lbs.

BARRED ROCKS.—The ideal wherein there is combined utility and also artistic beauty, we know as the "Barred" variety of the Rock family. From the cross of a Dominique cock

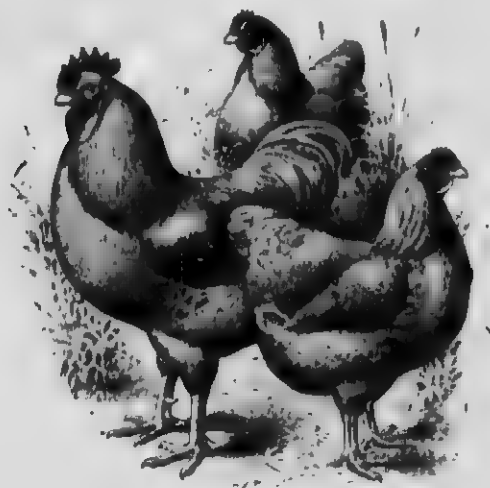


White Plymouth Rocks.

with a Black Java hen, retaining the good qualities of both and developing features entirely their own, the Barred Rocks have become distinctive, their bearing and striking plumage being the outward evidence of a living mechanism that is sturdy and result-producing. They have bright eyes and a red comb and face, with yellow legs and beak. The feathering is dark

THE POPULAR BREEDS

and white, striped around the whole body, but in reference to color, as the Standard of Perfection says, this is "exceedingly difficult to describe; in fact, the true and exact shades can be learned only by observation. The colors should be modified black and white in all sections, the bars narrow, regular and running parallel across the feathers, the overlapping of the feathers producing a bluish tinge when viewed under certain light reflections. The per-



Buff Plymouth Rocks.

fect colored Barred Plymouth Rock should show the same shade of color in all sections and be barred to the skin."

WHITE ROCKS.—Both as a utility bird and also as a frequent visitor to the fair, the White Rocks are becoming well and favorably known. Spotlessly white, even to the quill, their plumage is full and smooth; they have the yellow beak and yellow legs, and bright red comb and face

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which contrasts strikingly with their white feathering. It is generally believed that the variety is simply a sport of the Barred Rocks some thirty years ago, having since then been improved and built up, the body and chest especially being lengthened, making altogether a better and more valuable bird. White Rocks are prolific layers, and will adapt themselves contentedly to almost any locality.

BUFF ROCKS.—This is the third variety in the Plymouth Rock family, and perhaps the least bred. Yet, in color the Buff Rock is rich and certainly attractive. They are also more even in their color than any of the other buff breeds. The skin is yellow and tender and few black feathers are found, thus fitting them for table use. As layers some remarkable egg records have been produced by the Buff Rocks, and there is no doubt but that they are constitutionally strong.

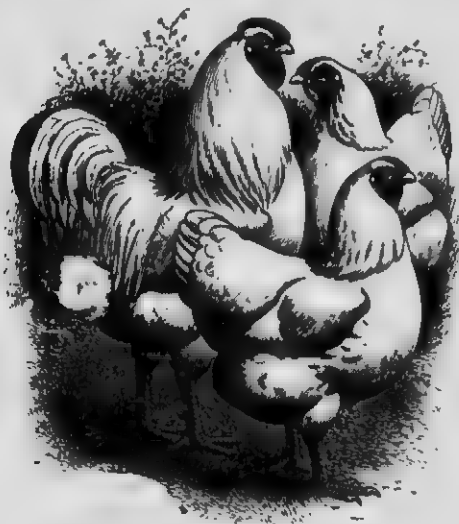
WYANDOTTES.

An American family, of eight recognized varieties, particularly noted for their handsome shape and neat appearance, the Wyandottes are a hardy and vigorous breed and a truly excellent utility fowl. Their individuality is self evident; it is unmistakeable in their bright red combs and faces, sprightly, active movements, the outline of curves that melt gradually into one another, and the well poised bodies on stout yellow legs. In shape and make-up the Wyandottes are compact, the cock weighing 8½ lbs.; hen, 6½ lbs.; cockerel, 7½ lbs., and pullet, 5½ lbs.

The Standard of Perfection says that the "wide range of color found in the eight varieties of this breed allows every admirer to indulge

THE POPULAR BREEDS

his fancy. Each color has points of special beauty difficult to obtain. Whichever variety one may choose he will find interesting color problems to be solved. In the Whites, it will be how to secure pure white plumage, and escape creaminess and brassiness; in the Blacks, how to obtain greenish, glossy black and not have purple bars; in the Silvers, how to obtain silvery hackles free from brassiness, large, oval, white



White Wyandottes.

centres free from mossiness, and breast lacing free from white edging; in the Golden, how to get rich, golden bay, which in this variety supplants the white in the Silvers; in the Buffs, how to secure an even shade of rich, golden buff and have the same shade of color prevail throughout the specimen, and to avoid the out-cropping of Black and White; in the Partridge and Silver Penciled varieties, how to obtain in the females

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the rich foundation color, with distinct penciling thereon, which they inherit from the Partridge Cochins and the Dark Brahmas."

WHITE WYANDOTTES.—Particularly good results have been achieved with this branch of the Wyandotte family, and they are becoming very popular and numerous. Clean colored birds, with pure white feathering from the skin out, yellow legs and beak and red comb, the White Wyandottes are favorites among fanciers, as



White Wyandottes.

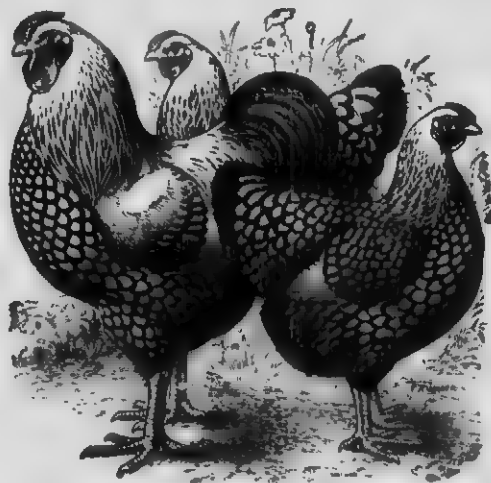
well as among poultrymen generally, and make especially good broilers. The chicks are hardy and full breasted, and when properly hatched the pullets come to laying maturity in the early Fall. Their eggs are nicely shaped, and as layers no utility fowl can surpass the White Wyandotte.

GOLDEN WYANDOTTE. — Majestic in their wealth of golden bay plumage, interlaced with

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striped black, giving to them an appearance of fascinating splendor, the Golden Wyandottes have been found a useful and remunerative strain of birds. The number raised is not large, yet those poultrymen who are successfully handling them are eulogistic in praise of their good qualities. The difficulty which seems to prevent a greater development of the Golden Wyandotte is inability to breed true.

The comb, eyes and face are bright red, the



Silver Wyandottes

legs yellow, and the beak dark, except at peak where it shades to yellow.

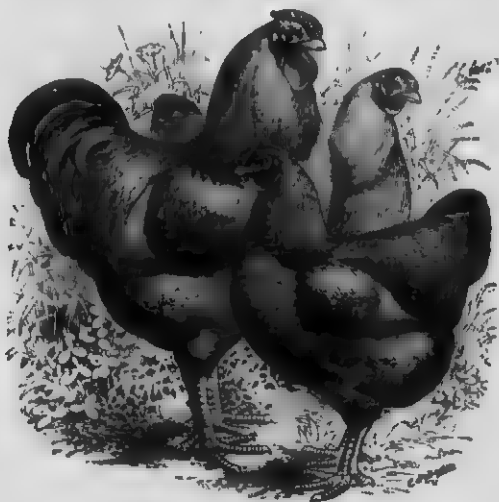
SILVER WYANDOTTES.—First known as the American Sebrights, the Silver strain is also the original of the Wyandotte family. Silver Wyandottes were exceedingly popular until the advent of the White Wyandotte, which is a sport of the original. Now, the Silver Wyandotte is not bred nearly as extensively, primarily, because like the

THE PERFECTION WAY

golden variety so much attention and ingenuity is required to retain them true to type. But when able to claim fulfilment of the Standard of Perfection they are a very beautiful fowl.

Silver Wyandottes are a good quality table bird, and they lay a brown egg which exactly fills the market demand in certain localities.

BUFF WYANDOTTES.—It is not unanimously agreed from whence this variety developed, both the Cochin and Rhode Island Red having



Buff Wyandottes.

entered into the formation. Possessing the yellow beak and shanks the plumage is of a rich golden buff, shape being that of the regular Wyandotte type.

BLACK WYANDOTTES. — Black throughout, carrying over it a greenish hue, even the beak and legs being black, though shaded with yellow, the bottoms of the feet being yellow also, this breed of fowl seems to hold its own. The

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development of it, however, has not progressed to any extent.

The Columbian, Partridge and Silver Penciled are the three remaining varieties of the Wyandotte family, and meritorious features are claimed for each of them by breeders who have given their breeding special attention. In color the Columbian resembles the Light Brahma. The Partridge variety are a reddish-brown color, the neck feathers showing black stripes and the



Buff Orpingtons.

wings being black with brown edges. The Silver Penciled Wyandottes are dark greyish with distinct penciling of black and grey throughout.

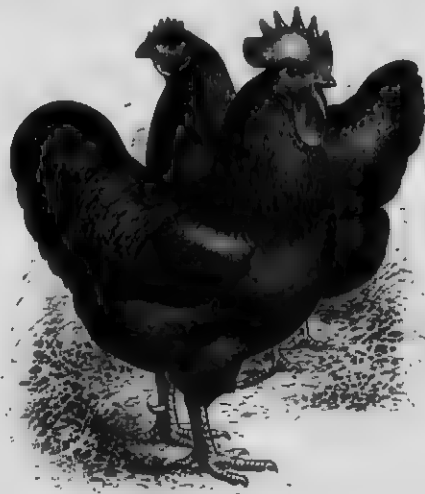
ORPINGTONS.

From an endeavor by an English gentleman to produce, as he said himself, a breed combining all the good qualities of the Plymouth Rocks, Black Minorcas and Langshans, there has been

THE PEEBLESS WAY

developed the well-proportioned massive breed of fowl known as the Orpingtons. They are the most recent importation from the British Isles to the American continent.

Noble looking birds, seemingly aristocratic in their demeanor, with bodies round and breasts full, legs short but stout, and heads poised upward, they are rapidly coming into prominence. They are a large type of fowl as will be seen by the standard of weights—cock, 10 lbs.; hen, 8



Black Orpingtons.

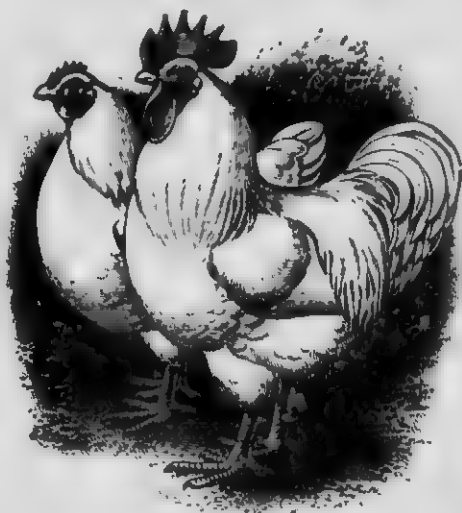
lbs.; cockerel, 8½ lbs., and pullet, 7 lbs. White skin and white legs give the Orpington an attractive appearance as table fowl, and their egg-laying qualities when developed will show a very satisfying record.

BUFF ORPINGTONS.—This is the best known and most extensively bred of the Orpingtons. White in beak and also legs, with bright red comb, its plumage is an even shade of golden

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buff, over all. There are different hues of the buff, one of which is called the lemon buff. In breeding Buff Orpingtons it is sometimes difficult to keep them true to color, the plumage becoming mealy and shaded.

The Black and White are the two remaining of the Orpington family, and though not so extensively bred are favorably known, and no



White Orpingtons.

doubt they will become more popular in the future.

LEGHORNS.

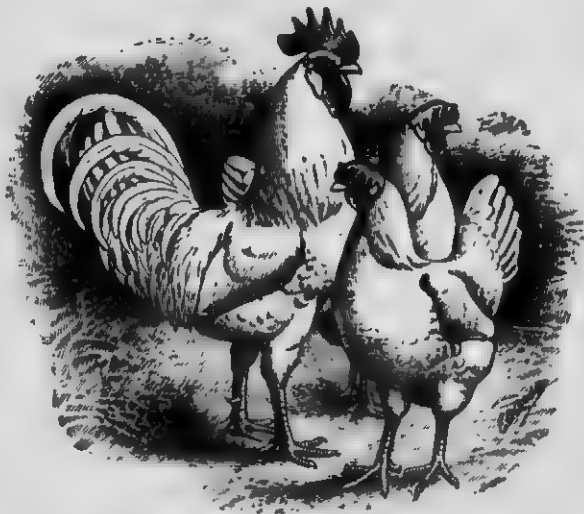
Popular because of their sprightly and striking carriage, and also because of their prolificacy, Leghorns are a family of birds found practically in every section of Canada.

There are seven recognized varieties, viz.:—Single comb White, rose comb White, single comb

THE PEEBLES WAY



R. O. White Leghorns.



S. C. White Leghorns.

THE POPULAR BREEDS



R. C. Brown Leghorns.



S. C. Brown Leghorns.

T H E P R E E L E S S W A Y

Brown, Buff, Black and Silver Duckwing, the last three being single comb.

Leghorns are an importation from the city of that name in Italy, at least such seems to be the most generally accepted conclusion from among the varied theories in regard to their origin. For a number of years little was known of them on the American Continent, but the persistency with which they developed as egg machines compelled recognition, and once popularized as layers, the Leghorns have retained their prestige. Furthermore, they are considered a very delicious table fowl, but being small in size are not suited for wholesale meat marketing.

Leghorns are not inclined to be broody, in fact they have been aptly termed non-sitters. Their whole attention is devoted to producing the egg and they want someone else to produce the chicks. They are thrifty birds and will keep conditioned when in close confinement if exercise is provided by throwing grain in litter. Leghorn chicks mature early and their development at two and three months old is most marked.

RHODE ISLAND REDS.

The Rhode Island Reds have of late become one of the most popular breeds. They are not, as it is sometimes supposed, a recent acquisition to the poultry family. For years they have been raised in the American State from whence they take their name, originally being the result of Game, Asiatic and Mediterranean crosses.

That they are in a transient condition might aptly be said of the Rhode Island Reds, because though recognized as a standard breed, yet there is considerable variation in the color, and to perfect this without injuring the economic





MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



4.5

5.0

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6.3

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18.0

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28.0

31.5

36.0

40.0

45.0

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56.0



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BILLS OF TIMBER

HEN HOUSE

No. of Pieces	DESCRIPTION	FEET
12	Joists 2"x6"	360
1	Door 2"x6"x10'	20
	Roof Shingles	100
	Clapboards	200
	Shake 2"x6"	50
	3"x6" Shingles for Interior	100
	Sills and Plates 4"x4"	100
	Shingles 2"x4"	80
	3"x4" V. Joint for Door and Sill -	
	Windows	25
	1"x12" Dressed for base etc.	100
2	Window Frames 4"x6"x4"	
2	Sashes 4"x4" (6 panes)	

NESTS

No. of Pieces	DESCRIPTION	FEET
12	1" Dressed on one or both sides	120
12	2"x4"x3"	24

MBER

FEED HOPPER

No. of PIECES	DESCRIPTION	PLAN
	Top and Ends 3" T and G	54
	1" Planked on one or both sides	10

COLONY HOUSE

No. of PIECES	DESCRIPTION	PLAN
	Clapboards	36
	1" Planked on both sides	100
	3/4" T and G Flooring	54
	3/4" T and G 4" Wide	10
	4 Sashes 2'10" x 2'10"	
	2 Window Sashes 2'10" x 2'8"	

THE POPULAR BREEDS

value of the type is the problem to the solution of which breeders are devoting their attention. The feathering is of red, the tinges varying from rich red to black, yet blending harmoniously. The beak and shank are reddish also.

Prolific layers, their plump and compactly shaped bodies fit Rhode Island Reds for market-ing. The cock should weigh $8\frac{1}{2}$ lbs.; the hen,



S. C. Rhode Island Reds.

$6\frac{1}{2}$ lbs.; the cockerel, $7\frac{1}{2}$ lbs., and the pullet, 5 lbs.

MINORCAS.

Minorcas are the largest and heaviest of the Mediterranean fowls, and they are also a very pretty bird, dignified and dainty in their bearing. They are distinguished, says the Standard of Perfection, by "long bodies, very large combs, long full wattles, large white ear-lobes, dark colored legs, and pinkish-white or flesh-colored

THE P E E R L E S S W A Y

skin. The Minorca head is carried rather high; the back is long and sloping; the tail is spread somewhat and only moderately elevated, being carried at an angle of forty degrees from the horizontal. Their legs are firm, muscular, and set squarely under the long, powerful-looking bodies. At the shoulders the back has the appearance of being rather flat. The lines of breast and body are well rounded and the general bearing of the birds, male and female, is graceful,



Black Minorcas.

aggressive and commanding, for their size. The Minorca plumage is compact, smooth on surface, fitting closely to the body in all sections. The beetle green, brilliant black surface color of the Black variety should be free from purple, and the plumage of the White variety should be free from foreign color."

The cock of the Black Minorcas, single comb,

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weighs 9 lbs. and the hen $7\frac{1}{2}$ lbs. The cockerel weighs $7\frac{1}{2}$ lbs. and the pullet $6\frac{1}{2}$ lbs. The single comb White and rose comb Black Minorcas weigh one pound less throughout.

Black Minorcas are splendid layers, and their eggs are large and white in color. White skin and legs might constitute them a poor market bird, though in localities this point would not be noticed.

Similar to the Leghorns the Minorcas are



Blue Andalusians.

active and thrifty in their disposition, and enjoy working the day long. They will stand confinement and are strong constitutionally.

ANDALUSIANS.

The birds named under the above head are of a large, heavy and hardy breed. Prolific layers they are also well proportioned for a market

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fowl, but the leaden blue color of the skin and shanks prevents their becoming popular.

Andalusians are an importation from Spain. They are not bred on this continent nearly as extensively as formerly, and in fact seem to be disappearing practically from the yards of utility type poultrymen.

COCHINS.

Cochins are a massive deep bodied breed of poultry, the cock weighing 11 lbs., and the hen



Buff Cochins.

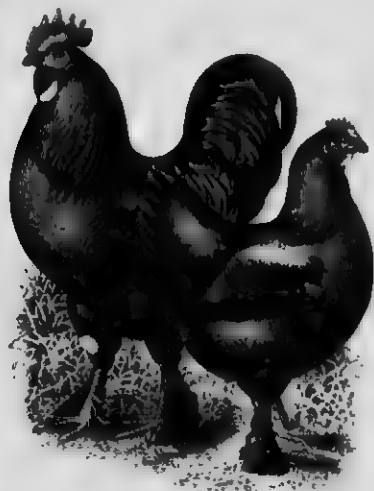
8½ lbs.; the cockerel 9 lbs., and the pullet 7 lbs. Slow and awkward of movement they are considered good sitters, though indifferent layers.

Cochins furnish a good quantity of meat, and as the chicks mature quickly, the young stock is quite profitable for marketing. Favorable features in this breed of fowl are their hardiness, their winter laying qualities, and the economy with which they may be handled.

THE POPULAR BREEDS

LANGSHANS.

From England the Langshans were imported to this continent, the type coming originally from China, it is thought. They have been considerably developed of late years and seem to be becoming more popular. The general characteristics of these birds are, as the Standard of Perfection says, "great proportionate depth of keel, with round contour of breast; fineness of bone for size of fowl; smooth, white skin and pinkish-white flesh. The male develops great length of



Black Langshans.

tail feathers, the sickles not uncommonly attaining a length of sixteen or seventeen inches. Its large, well-spread tail, carried erect, with abundant, close-lying saddle feathers, full-hackled neck and upright carriage, give the effect of a short back. The surface of plumage throughout is close and smooth, being very bril-

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liant with greenish reflections in the black, and silvery white in the white variety."

Langshan cock should weigh 10 lbs.; hen, 7 lbs.; cockerel, 8 lbs., and pullet, 6 lbs.

Like the Brahmas and Cochins, the Langshans are slow of movement, yet thrifty foragers. They make good layers though the egg may be considered rather small. As a table fowl the whiteness of the Langshan skin makes it most desirable in certain localities.

CHAPTER XXV.

DISEASES OF POULTRY.

CONSIDERING the world as a whole, and its composition, the fact that poultry are subject to disease would seem but natural. Human and all animal life, generally, fall a prey to sickness of a greater or lesser extent at some time or another. Should we expect poultry, a part of the make-up, to be different from the remainder and altogether free from disorder? We might hope that they were, and we can to a very great extent prevent sickness among poultry by keeping them under proper conditions, but here and there, one must naturally expect trouble. And, furthermore, as a poultry authority has said, there can be no doubt whatever that a certain percentage of death amongst fowl is an actual benefit. Fowls, like everything else, must die some time; and, again like everything else, it can but seldom happen that the cause of death will be mere old age. A certain proportion of loss, therefore, is not necessarily a proof of mismanagement, but is rather part of the economy of the great Superintendent of the universe, by which creatures no longer really capable of maintaining the vigor of the species are taken from a world in which they are of no further use. As is well put by a writer in one of the leading poultry journals, the sure eye of Nature has picked out the very one that you would be glad to be rid of could you detect them, and has left you the hardier individuals to be bred from; the weakness, moreover, often consisting in some profound fault that does not show itself.

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Disease may be traced to an inherent weakness in the stock or to unfavorable surrounding conditions, whether these be lack of nourishment, improper housing, filth, wet, cold or dampness. So the real cure for the majority of poultry ills, is prevention. Have the feed and quarters of your flock always clean and wholesome, and you will have taken a long step towards curing them of any probable or possible disease.

With reference to medicine we would strongly advise against the use of a great quantity of the "dope" offered for sale on the market to-day. Many of the mixtures advertised under the caption of remedies contain ingredients which are more injurious than beneficial, and our experience has been that the fewer the medicine bottles about the plant the better. Imitate nature as closely as possible. We would recommend simply Epsom salts, carbolic acid, coal oil, glycerine, laudanum, an iron tonic, cayenne pepper, and a few half grains of opium, as being an amply well supplied medicine chest.

Following is a list of the common diseases, symptoms being described, and cures also:

BLACK ROT.—Somewhat difficult to explain the reason of the disease, the symptoms of which are swelling in both legs and blackening of comb, together with emaciation. Vaseline or carbolic salve may be rubbed on the parts, and at the same time administer a dose of salts. Isolate the birds showing sign of the disease and feed warm food. When noticed in its early stages, the trouble may be combatted, but it is a hard disease to cure.

PARALYSIS.—This is an affection, which when it attacks poultry can hardly ever be over-

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come, any more than can the same disease when it grips a human being. Often have we seen strong men suddenly paralyzed. The limbs become to a greater or lesser extent, helpless and though life remains, often for years, yet the activity of the person affected is seriously inconvenienced. The paralysis which attacks poultry is practically of the same nature. The immediate cause is generally excitement of some kind. If the trouble originates in the brain due to a broken blood vessel the bird grows limp and finally unconscious. It will probably die in a short time.

How to save a paralyzed bird is a question which has received considerable thought, and has also been the result of investigation. If the stroke is not very serious, and the bird a valuable one, it may be saved by quickly making an incision under the wing which pierces the large vein running longitudinally, and thus allowing the escape of a good quantity of blood, after which the wound should be closed up. Whether a bird once seriously affected with paralysis, and afterwards cured, will ever be of much use is doubtful.

GAPES.—Among young stock a disease known as gapes is found. It is really a sickness of chicks, and is seldom seen in old birds. When chicks open their mouths as wide as possible and then "gape," accompanying the effort by a short choking cough which becomes almost incessant, until finally the chick suffocates, you may put the trouble down as being due to gapes. The exact cause is as yet a disputed one, and has been seen in wild as well as domesticated fowl. Some authorities claim it is from earth worms, others that it comes from damp ground, and many are of the

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opinion that sour and musty food form the breeding places of the gapes. Certainly, in our opinion, the disease is the result of the existence of wrong conditions and the allowance of filth to prosper. The chicks of a poultryman who is scrupulously clean are never affected by gapes.

To correctly describe the disease, it consists in the windpipe of the chick being infested with small reddish worms. These worms are sometimes as large as an ordinary pin, and by their constant movement tickle the windpipe. It is in attempting to relieve the itching that the chicks stretch their necks and gape. As the worms grow they force the chick to cough by the increased aggravation.

Our method of curing is to take a hen feather, and stripping it to within an inch of the end, insert in the windpipe of the affected chick, twisting it around and quickly withdrawing. This process dislodges the worm, and if it does not adhere to the feather, will be coughed up by the chicken. Dampening the feather with turpentine, is sometimes advised, but if a small drop of the fluid should enter the lungs the result would surely prove fatal.

Where many of the flock have been affected the feather treatment might be too tedious, and the method of curing them would be to place a number of the infected chicks in a comparatively tight box, and dust in the compartment a considerable quantity of fine air slacked lime. Breathing the air heavily laden with the fine lime will generally cause the dislodgment of many of the worms. This treatment is, to an extent, severe, and sometimes results in the death of the weakest of

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the birds; however, the largest proportion of the brood will pull through the ordeal, and it is better to risk losing a few weak chicks in attempting to cure, than the whole flock by allowing the disease freedom.

LEG WEAKNESS.—Birds of large frame, and especially cockerels, sometimes develop between the age of three and six months, what is known as leg weakness. The trouble may occur either from muscular weakness, or deficient bone material. An affected bird will limp, and to look at it you would come to the conclusion that its body was overlarge and weighed the legs down. A liberal supply of bone dust, or an invigorating tonic, will generally cure the ordinary cases.

RHEUMATISM.—The symptoms of this disease are loss of appetite, together with an inclination to squat around. Difficulty in walking is apparent; joints are swollen; feathers droop and spread. It is one of the easiest diseases to diagnose, and is caused either by constitutional weakness, cold, damp quarters or roosting in an insufficiently warm place. The rheumatic birds must be put in warmer quarters and hopper fed ground food. A little salicine may be mixed with the drinking water daily, and rub the limbs three times per day with a mixture three parts oil to one of turpentine.

CRAMPS.—Very similar to rheumatism in adult fowl. However, the most frequent sufferers from cramps are early chicks, and the cause is damp or cold weather. If exposed probably every chick will be affected and no poultryman can expect his flock of chicks to escape the disease if he leaves them exposed. Prevention is worth a dozen cures. Preven-

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tion simply means dry and comfortable quarters and wholesome food.

Once cramps are noticed they should be checked immediately. It is never hard to tell if a chick has cramps. The chick will limp or wobble and appear to walk with pain. By removing the whole brood to warmer quarters and giving special attention to them for a few days, the disease, if not too far advanced may be checked, but if the disease has been allowed to reach that stage where the chicks affected, show contracted toes, then it will be necessary to give the little tots a hot mixture in which a good quantity of pepper has been sprinkled, and it will be further necessary to bathe the limbs and feet in warm water, at the same time rubbing gently, and then applying a generous quantity of the turpentine. Continue the treatment until it is evident that the chicks are cured.

LIMBER NECK.—This is a disease of the nervous system and the bird seems to lose all power over the neck muscles. It is sometimes caused by severe attacks of lice or mites. A tar or gum salve applied to the affected part will generally cure.

CROP BOUND.—Overfeeding and careless feeding will cause the crop to become so distended that the entrance to the stomach closes. The food matter remains a solid mass, and after a short time will sour, thus bringing on disease. A bird with a swollen crop is easily noticed, and should receive attention. Handle gently. Pour some warm water down the throat, then a teaspoonful of sweet oil. By rubbing carefully with the thumb and finger the contents of the crop will generally empty out of the mouth. Give the bird a half tea-

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spoonful of Epsom salts, and leave in an empty pen, without food, for a couple of days, not only to thoroughly clean out, but also to allow the crop to contract to its normal size. After the second day feed soft food sparingly until the bird is gradually brought back to its normal diet.

Should the above remedy not prove successful—in a very bad case it might not—then an operation will be necessary. Wash off the skin on the crop and pull out a few feathers; with a sharp knife slit the crop, making the incision near the top, being sure that the point of the instrument does not enter any of the large blood vessels. Clean the crop out, and wash it with warm water. Sew up carefully with a silk thread, a horse hair or some fine gut string. This need not be removed. After the operation treat as in the other case. Do not give the bird drinking water for at least thirty-six hours.

ROUP.—This is a disease which we may say is well known because it is the most common and one which unfortunately seems to, now and again, get a foothold in the flock of every farmer. A reason for the prevalence of roup is that poultrymen do not appreciate its infectiousness, and the consequent danger of allowing it to remain in a flock unchecked. Roup is regarded as a cold. It is worse, being very close to diphtheria, and is equally as contagious; hence the seriousness of this disease, which will pass from one fowl to another of the same flock with surprising rapidity, and may be carried from one flock to another by the introduction of infected birds. Roup is contagious and therein lies its greatest danger.

One of the first symptoms of the disease is

a thin watery discharge from the nostrils, followed by apparent difficulty in the breathing of the bird. The eyes will sometimes become filled either partially or completely with a cheesy substance. Bathing with hot water will remove the latter.

The first thing to do when the disease is noticed is to remove the affected bird or birds so that the remaining healthy members of the flock will not fall prey to the sickness. It would be advisable also to disinfect the poultry house very thoroughly.

An antiseptic, say, a two per cent. solution of creoline in water, or a like percentage of carbolic acid in water, should be injected in small quantities in the nostrils of the sick bird. Administer a dose of Epsom salts in the drinking water. Feed wholesome and easily digested foods.

DIPHThERIA.—The second stage of roup is the most appropriate manner in which to describe diphtheria in fowl because roup is but a mild form of diphtheria. The two diseases are very similar, the symptoms in the latter being more complicated. Sores and ulcers appear about the head and neck of diphtheria sick fowl, also sometimes on the comb, face and tongue.

After isolating, as for roup, administer the dose of salts, and apply to the sores a solution containing carbolic acid by means of a brush or piece of cotton. A good mixture may be made of carbolic acid, one drachm, sulphuric acid, three drachms, glycerine half an ounce and iodine half an ounce. Feed soft food until cured and before allowing the bird to return to the flock make certain that it has been perfectly cured, because the least trace of symp-

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toms may cause an outbreak in some of the other fowl.

CHOLERA.—Unclean and stagnant drinking water, lack of green food or animal foods or excessive exposure to the sun, will produce chicken cholera. A sudden and violent thirst, accompanied by diarrhoea which grows worse, and a general weakness, most apparent, are the symptoms. It is difficult to prescribe a cure because when discovered the disease is so far advanced that treatment is too late to be of avail.

We would add, however, that any poultryman who discovered cholera among his birds should endeavor to stamp it out, even if doing so means the total destruction of every bird on the plant. Cholera runs rapidly, it spreads like wild fire, and the disease microbe is so easily transmitted that to allow the passage of a cholera sick bird, or even an egg from a cholera affected pen, to another vicinity among other hens means the beginning of a general disease, which occurrence would be most fatal individually and collectively to the poultry industry.

Cases are known where cholera has been cured when diagnosed at an early stage by dosing with a mixture composed of rhubarb five grains, cayenne pepper two grains and landanum ten drops, administering the mixture every three hours. If the bird is benighted at all the recovery will be speedy.

BRONCHITIS.—The distinguishing feature of bronchitis from catarrh is the noticeable coughing of the fowl. Administer two or three times per day a teaspoonful of one-half glycerine to one-half compound of tar.

PIP.—When it is noticed that a fowl is not

eating and you are at a loss to know the cause open its mouth. If a small sharp edged growth shows at the end of its tongue this is the pip. Simply remove the growth with your thumb nail and there will be no bad after effects.

ULCERATION AND SORES.—We have been asked the cause, and cure for, different outbreaks noticed about the head and face of birds. The question is so broad, that the answer we must truthfully make is, the causes are sometimes not easy to locate, and all causes may not be alike. A fowl run down and in poor condition, whether from incorrect feeding or improper housing may break out in sores. Their appearance means that the blood is thin. Ulcerations accompany both roup and diphtheria so that to specifically state any particular reason or source of such trouble would be difficult indeed.

Change the feed, and administer any good poultry tonic containing iron. Carbolic salve may be applied to scabs, and it is also advisable to bathe the sores with warm water a couple of times each day until cured.

An ulceration containing matter may be lanced and simply bathing with warm water afterwards will cure.

FROST BITE.—During very severe cold weather the large combed breeds, if not housed in comfortable warm quarters may suffer. Frost-bite will be noticed in the morning generally after a particularly cold night. Rub the comb and wattles with snow vigorously, and apply glycerine.

PNEUMONIA.—This is a name applied to inflammation of the lungs. The symptoms are similar to those of bronchitis, except that breathing is distressed, and matter is coughed

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up. Place the bird in a warm place and feed on bread soaked in milk. Between the shoulders and along the neck paint with iodine, or rub these parts with some turpentine, but not too great a quantity, as it will irritate. Administer every hour a drop of tincture of aconite in a spoonful of water.

SCALY LEGS.—This is the development of rough scurf on the legs of fowl. Exposure and dampness sometimes bring it on. The disease itself, however, is a parasitic insect which burrows into the shanks causing the eruptions, and will transmit itself from one fowl to another with surprising rapidity. Hence, the necessity of checking the disease promptly. It is always capable of cure when treatment is applied reasonably early.

Have the bird in a warm place and wash its legs with soap and tepid water, rubbing vigorously with a hard brush. Mix equal parts of sweet oil and coal oil, and apply several times per day, washing with soap and water daily also. If the cause is only slight one or two applications of the ointment may prove sufficient.

DIARRHOEA. — Something radically wrong with the digestive organs is the cause of diarrhoea. It may be brought on by lack of an important element in the food, or by any sudden change in diet, or sometimes severe changes of weather are the cause. A meal of boiled rice if given when the looseness is first noticed will nearly always effect a cure. Feed dry food in small quantities for a few days, and in the feed mix charcoal dust freely. Charcoal, we may add, is one of the best ingredients there is for keeping the digestive organs in working order.

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If the case is exceptionally severe and dysentery has set in, as evidenced by blood evacuations, the bird may be given a few drops of laudanum, or a half grain of opium.

WORMS.—Sometimes when fowl seem out of condition and the cause or reason is not easy to locate, it may be worms. Examine the excretions to discover their presence. To cure give one-quarter of a teaspoonful of sulphur mixed with flour and water.

DEBILITY.—Feebleness in fowl without the accompaniment of the positive symptoms of any particular disease, may be produced, through forcing for eggs, over handling, for an instance at shows, or fright. All that is necessary to effect a cure is kindness, and care, together with dry food and an iron tonic. Some authorities advocate the administration of raw eggs, even if the case is so bad that these must be forced down the bird's throat.

FEATHER PULLING.—This is one of the really unfortunate troubles in poultry. It is not exactly a disease, but rather a bad habit. Numerous reasons have been advanced in explanation of its existence, and many varied remedies have been used with good success in combating the trouble so that despite inquiry, observation and experience we cannot emphatically attribute feather pulling to one particular cause, nor name a specific remedy.

The habit is often learned by fowl in confinement caused by overheated blood. When a bird pulls its own feathers the cause may be an insect at the base of the quill. If it is the former change the diet, giving more animal food; if the latter put a little ointment of sulphur and lard on the affected parts.

Pulling feathers from one another is a more

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serious matter. This disgusting habit is the result of a taste for some ingredient missing in the diet of the guilty fowl. Idleness, thirst, or having to drink sun warmed or stagnant water are causes of feather eating.

Give green foods, also raw meat, and if doing so does not arrest the habit, pare away the edges at the tip of both mandibles of the offending bird so that the sides and front will not close tightly. The process will not interfere with the bird being able to eat, but the feathers would slip through the beak. Repeated failure to successfully pull more feathers will cause abandonment of the habit.

EGG EATING.—This becomes a serious habit once it starts, if allowed to gain headway. It is due to a lack of meat or grit, or by a broken egg being found by the fowls. Always make sure that a good quantity of grit and oyster shell is supplied to the fowl. These are essentials; they must have them.

A hen that will not lay on the nest, but prefers to lay on the floor is often responsible for starting a flock at egg eating. Have the nests well darkened, and so constructed that the egg will drop through the nest onto a cushion of straw, thus taking it from the sight and out of the reach of the bird.

If only one hen in a flock is guilty of egg eating remove her before the others have learned the practice. If the isolated bird persists in the habit kill her off.

EGG BOUND.—When a hen comes from the nest appearing distressed after having been there some time without laying, it may be that she is egg bound, that is, an unusual sized egg has blocked the oviduct. Of course we do not mean that because a hen may go to the nest

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regularly and regularly leave it without having laid, that she is egg bound. If the attendant is of the opinion, however, from the appearance of the bird that she is suffering, as shown by her limp and droopy gait, it would be advisable to examine. If a syringe is to be had conveniently, wash the oviduct with warm water and soap, and then inject a teaspoonful of olive oil. The oil will open the egg passage and give relief. A feather may be substituted for the syringe, oiling it well, but one must be careful in handling the bird so as not to injure it.

SOFT SHELLED EGGS.—Strange as it may seem to inexperienced poultry raisers, over feeding will cause soft shelled eggs, just as the lack of shell making material in the food will bring on the same trouble. In the event of your hens laying soft shelled eggs when properly fed then the reason is excess of food—the bird is fat—and not in egg producing condition. Starve her for a few days gradually changing and reducing the amount of feed given.

LIVER TROUBLES.—Congestion is one of the liver diseases, brought on by a bilious attack. A purgative—Epsom salts—twice per day will effect a cure.

Enlargement of the liver is a disease, generally brought on through lack of green food. The symptoms though not always definite are loss of appetite and apparent laziness. The sick bird will sometimes be troubled with yellow evacuations. Dose with Epsom salts, feed less heavy foods and more green stuffs.

Inflammation of the liver is a similar disease, only very severe, bringing on immediate death unless the attack is noticed early enough. Wet or exposure to cold, in summer months

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will produce this disease. The bird will show evidence of limpness and pain and seem tender. Hold it over a pot of boiling water so as to steam well, two or three times per hour, immediately that the trouble is discovered. If the pain seems relieved after four or five hours, give a dose of salts and later in the day feed lightly, say bread and milk. When the symptoms have all disappeared gradually increase the diet and bring the bird back to its regular course.

CONSUMPTION.—When a bird shows signs of emaciation and will not respond to a cure, but grows continually worse, it may be concluded that the trouble is tubercular. This disease will sometimes follow a severe cold, pneumonia or bronchitis, but generally can be traced to weakened and debilitated parent stock. A consumptive bird must be killed immediately.

WHITE DIARRHOEA.—This name has been applied to different diseases, and considerable discussion and experimenting has taken place in an endeavor to ascertain the origin, and nature of white diarrhoea. A bacillary disease, infectious in the extreme, white diarrhoea is also a terrible destroyer, hence the importance of poultrymen realizing its seriousness, and taking steps to combat it.

White diarrhoea of chicks is an inflammation of the intestinal pouches caused by the presence of a parasite. Chicks may show signs of white diarrhoea any time after hatching. The outstanding characteristic, or symptom, is a whitish discharge from the vent. This discharge may be slight, or it may be profuse, and in color varies from white to a creamy shade. Chicks affected become listless and huddle to-

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gether constantly. They refuse to eat, the wings droop, and the eyes close. They will constantly peep, and have difficulty in breathing. Some of the chicks will die suddenly and others will waste away gradually.

White diarrhoea germs locate themselves in the intestines of adult fowls; they lodge on eggs from infected hens; the germs are also found in droppings; on the roosts, nests, floors and walls contaminated by these droppings; they will thrive on the ground of the runs and in egg baskets; incubators may harbor these germs, the egg tray, or trays, being affected by the soiled eggs and the nursery by the droppings of the affected chicks, so it will be realized how easily the disease is transmitted, and how difficult of extinction.

Therefore use every prevention against white diarrhoea, and we heartily endorse the advice given in the bulletin from which we take the following suggestions; that every poultryman should learn to recognize bacillary white diarrhoea, and if the disease makes its appearance among the flocks of chicks every effort should be made to ascertain the source of infection. This may be breeding stock upon the place; eggs for hatching secured from other breeders; or newly hatched chicks purchased from others.

If the breeding stock proves infected there are two courses of procedure open: market the entire flock, or refrain from using their eggs for hatching; or install trap nests in the breeding pens, and by means of accurate pedigree records ascertain which individual hens are producing infected chicks, and remove such hens from the breeding flock.

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Since infection may be brought upon the place through purchased eggs or stock, such purchases should be made from farms where bacillary white diarrhoea has never made its appearance.

If bacillary white diarrhoea is known to be present on the place, steps should be taken to prevent the spread of the infection, and if possible, to effect a cure.

Prevention is the best cure, and as Dr. George Byron Morse, the greatest authority on this particular disease says, "the essential work in battling with this disease consists in prevention." That must begin with eggs used for hatching. These should be thoroughly and antiseptically cleansed by wiping in ninety-five per cent. alcohol.

If artificial incubation is used (and in this method lies the great hope of success), the incubator, if used before, should, previous to receiving the eggs, be carefully washed with antiseptic solutions and exposed to the sun. The egg trays should be scalded or flamed. The floor of the nursery should be moveable, so that it may be taken out and sterilized, and if made of burlap the old piece should be torn off, and a new piece mounted on the sterilized frame. The same precautions should be used with brooders. The soil to which chicks have access should be well covered with lime, dug up, and exposed to the drying effects of sun and air.

If natural incubation is practised, the hen for a week or two before being set should be treated with one-quarter to one-half grain doses of sulphate of iron daily, with occasionally an active purgative, such as calomel one

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grain, or castor oil one-half teaspoonful containing five or ten drops of turpentine. The eggs cleansed as directed above, should be placed in a perfectly fresh nest, which may be sprinkled from time to time with a little lime. After hatching, the hen with her chicks should be placed upon the ground that has been thoroughly sterilized, as described above, and at least every few days moved to fresh ground which has been treated in the same way and from which all chickens have been debarred.

The foregoing treatise covers, briefly, yet with sufficient detail to ensure results, the diseases found in poultry work. The language of description we have endeavored to make simple, and no unnecessary or exhaustive research has been gone into, or in fact attempted, because to do so would serve no purpose, and might, in the hands of beginners, defeat the very end at which we aim, that is to assist and make easy the work of poultry raising. Practically all the ailments to which fowl are heir to have been enumerated, and remedies therefor suggested. It remains for the reader to use his judgment, and benefiting by that insight which only actual experience can give, ever aim to prevent rather than cure, yet when inevitable sickness comes, treat it in a rational manner.

CHAPTER XXVI.

GEESE.

GEESE are a species of poultry that will thrive under conditions dissimilar to any other. They like low, wet or marshy land, and do not require much attention. In making the latter rather broad assertion, we have not any idea of inducing the lazy or indifferent poultryman to adopt geese rearing, believing that doing so will relieve him of a certain amount of labor and yet show a balance on the right side of the poultry ledger. By no means. At the same time the fact remains that geese will take care of themselves much more successfully than ducks and they will range over almost inaccessible ground and procure much food among grass or weeds. They must, however, have a dry place in which to sleep.

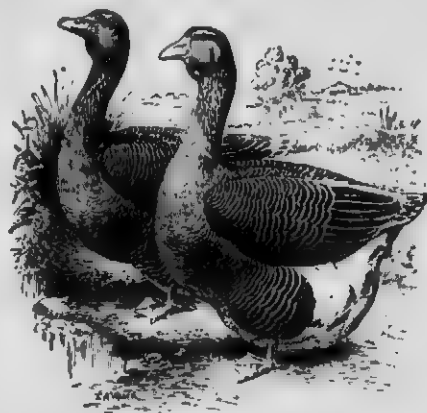
The average Canadian farmer can keep geese and make them pay. Small flocks are advisable, as geese do not thrive well in large numbers. The breeding stock may be retained for a long time, as the female will be profitable for from twelve to eighteen years with a good showing of fertility. Male birds should be renewed every five years.

KINDS.—The four breeds of geese we propose to enumerate—the more common utility type—are the Toulouse, African, Embden and Chinese. Almost everyone is familiar with the Toulouse geese. They are the largest and best breed, the standard weight of the gander being 20 pounds, and the goose 18 pounds. Toulouse are grey in color with white bellies, and reddish legs and bills.

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The African geese are also a large variety and grey in color, running in stripes of different hues. Their legs are orange color. This breed are easily reared and grow quickly, and make good eating. One detraction which makes them somewhat unpopular is the difficulty in dressing and they have dark skin and dark skin feathers.

The white Embden geese, with yellow legs and bill the same, resemble the Toulouse in shape, and for table meat are the favorite.



Toulouse Geese.

Hardy and vigorous the Embden lay early, and are good sitters.

Smaller in size, much like the African in shape, the Chinese geese are noted as layers, but unfortunately their eggs do not average high in fertility. As a market bird the Chinese is not desired because of its diminutive body.

BREEDING.—As geese are noted for their longevity, so is it true that the older birds are best for breeding and it is further advisable to mate before the winter sets in. They

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are generally mated in trios of two geese and one gander. While confined, green food should be supplied in plentiful quantities, if at all procurable. Corn is the best hard feed for geese, but must not be given in too great quantities, else the birds will become fleshy, and discontinue laying.

House arrangements, as described for ducks, will be found satisfactory in caring for



The Much Maligned Geese are Deserving of a Place on Every Farm.

geese. Do not crowd them, as they require plenty of room.

In hatching geese eggs the greatest problem is overcoming the tough shelled eggs. Fully developed goslings are often found unable to even pip the outer covering of the egg. For this reason considerable complaint is heard as to the failure of incubating geese eggs. However, there is less danger in helping gos-

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lings from the shell than any other species. A chick which has to be extricated from its shell will seldom thrive, but a gosling on the other hand is hardy and its extraordinary vigorous constitution permits of performing the operation.

Newly hatched goslings should be left in the nest or incubator for at least twenty-four hours after hatching. They may then be fed the same food as is recommended, in another chapter, for ducklings. After three days they may be given all the green food they will eat. When a month old they should be allowed to roam at large, receiving daily a feed of oats or corn, and the rest they get for themselves.

Until the goslings are fledged, the only special care is to keep them out of heavy rain, and not allow them to sleep on a damp floor. They must be kept clean and allowed plenty of grit. They feather very quickly and are fledged at twelve weeks of age. If the birds are to be killed as "green geese" they must not be allowed access to swimming water, but to plenty of young, fresh grass. They must have a supply of soft food to eat, and plenty of grit before returning to their nests after their evening meal.

Geese are prepared and dressed for market similarly to ducks, cooling and packing in the same manner. A ready sale will easily be found for them.

CHAPTER XXVII.

TURKEYS.

OF the many different species of poultry, turkeys are probably the most popular for table use, and year by year these delicious tasting fowl are becoming more scarce. Such a condition is due to the fact that the turkey trade is developing with much



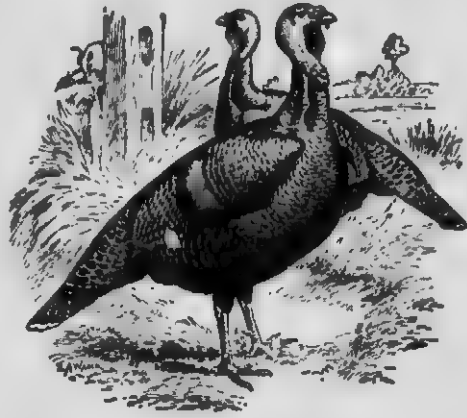
Turkeys at Home.

greater rapidity, than is the supply, and in large cities, the sale of turkeys commands a very high price at certain seasons of the year. Therefore poultrymen may confidently rear as many turkeys as they can conveniently handle, and be certain that the result of their labor will bring a profitable return. It is true that the breeding of turkeys is at times vexatious, but the troubles entailed are more than coun-

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teracted by their money value on Christmas and Easter markets.

Originally a wild bird, the turkey has never been really domesticated and the tamest of them will show traits of the roving disposition. However, careful selection together with correct food and proper attention will result in the rearing of a good class of farm turkeys that will prosper wonderfully and thrive under the confinement which they must naturally to an extent be subjected to. Owners of small



Bronze Turkeys.

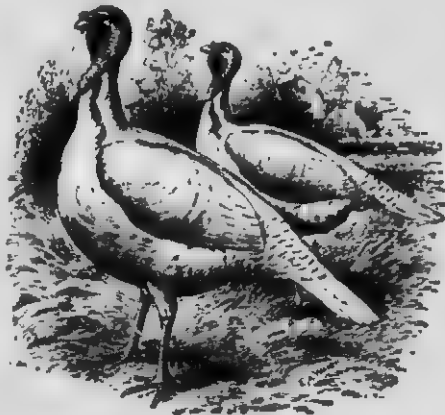
farms, or village lots could not expect to successfully raise turkeys on their restricted areas, and it is also well for even the large land owner to bear in mind that these birds never adapt themselves to artificial conditions in the same manner as the other species of poultry, such as hens, ducks, or even geese.

VARIETIES.—There are six varieties of recognized domesticated turkeys, the principal and most common of these being the Bronze. The others in the order of their fame are the White

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Holland, Buff, Slate and Black. The Bronze turkey is a large, strong, good looking bird, and size is one of its features. The adult male according to standard should weigh thirty-six pounds, and adult female twenty pounds.

MATING.—In the breeding of turkeys select females of large frame and mate them with a cockerel, the biggest and best of the breed that one can afford. Never select young and immature birds for breeders, but always breed from well formed mature birds. One tom may be



White Holland Turkeys.

placed with ten to fifteen hens, and whenever possible we advise having two males with a flock, because it sometimes happens that a valuable tom will not mate, and it requires the presence of the other bird to stimulate him to his duty.

November or December are the best months in which to mate turkeys, and by the first of February nesting places may be prepared. The wintering of parent breeding stock should be

THE PERLESS WAY

carefully looked after, guarding against the inclination of old birds to fatten, which is one of the most potent causes of infertile eggs. Turkeys should be kept in the open air as much as possible. The shed roosts must be placed low and nearly on a level, otherwise there will be a continual strife for the highest perch.

FEEDING.—Two feeds daily, together with an ample supply of fresh water continually before them, will keep turkeys well conditioned. The feed may consist of a dry ration of wheat bran or oat chops, with a sprinkling of cabbage or lettuce. Have oyster shell where they can get it any time. Cracked corn, or barley, or other small grains may be occasionally included in the diet.

HATCHING AND REARING.—Twenty-eight days are required to hatch turkey eggs, though the twenty-sixth day generally sees the appearance of at least some of the poults. If hatching by the natural method it is always advisable to have the nests set as near home as possible. Barrels laid on their side, with the open end facing southward make suitable turkey nests. Fifteen or sixteen eggs are enough for one turkey to handle, and she should be well dusted two or three times while setting. A slatted coop say three feet square and two feet high may be prepared for the brood and placed in a dry spot. Remove the mother hen and the poults to the coop on the second day after the hatching. Close attention and care is required in the handling of the youngsters, because they are very delicate. The first feed as in the case of young chicks, may consist of a quantity of fine grit, and also give them a fountain of fresh drinking water. A ration of stale bread

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crumbs, dipped in milk and dried, together with scalded bran and corn meal may be placed before them next, also occasionally small pieces of cheese. As the poults become older they may be fed ground oats and crushed corn, and all food ought to be interspersed with greens. The old hen may be fed whole corn on alternate days, to help her regain her flesh. A three meal diet is necessary while the hen is confined to the coop but it may be brought down to a two meal diet while on free range.

Poults must be well dusted once a week with insect powder, and a successful attendant cannot be too particular about this necessity. Few culls will be found among turkeys, but when an ailing bird is discovered, it must be removed from the flock at once.

The solid advice about having and retaining only birds of vigor and vitality is just as applicable to turkeys as to all other species of poultry.

CHAPTER XXVIII.

DUCKS.

THE Canadian market wants ducks and will pay profitable prices for them at all seasons of the year. Besides, there is a great demand awaiting the development of the production of these fowl. In fact so few ducks are offered for sale that the meat is to an extent considered a delicacy, hence those persons already specializing the rearing and marketing



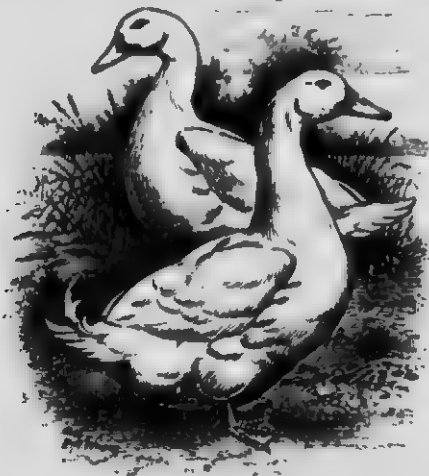
Duck Pond, Poultry Yards of Canada, Ltd., Plant.

of ducks have made the work a very gratifying success.

Features which commend the duck rearing business to farmers are that an ordinary house affords ducks shelter, they are easily confined, they grow quickly, they adapt themselves to any locality, they are comparatively free from disease.

D U C K S

Whether ducks require water for swimming has long been a debated question, but the consensus of opinion now is, we believe, that water is not necessary, though the breeding stock are better with it. The exercise will naturally add to their health and vigor, and this condition will in turn tend to add to the fertility of the eggs. Ducks for market, though, should not have access to a swimming pond, but as in the case of breeders their drinking troughs



Pekin Ducks.

should always have sufficient water in them, to allow the submerging of the bill to above the nostril. Good quantities of drinking water must always be before the ducks.

BREEDS.—Practically speaking, there are five breeds of ducks, suited to the conditions of this country, i.e., the Pekin, Aylesbury, Rouen, Cayuga and Indian Runner. The first mentioned, the White Pekin, is the most popular of

THE PERLESS WAY

the duck breeds, and the others are listed in the order of their merit. The Pekin is hardy, matures quickly, lays a good number of eggs, and having a deep, and well rounded body is splendid for marketing. The flesh is delicate and tasty. The Aylesbury duck resembles the Pekin somewhat, and a cross between the two breeds, that is the introduction of the Pekin drake to the Aylesbury flock, has often produced good results. The Rouen has one especially strong point, in that it is well shaped



Indian Runner Ducks.

and its fine grained flesh cannot be equalled, but on the other hand this breed is slow to mature.

HOUSING AND FEED.—In housing ducks the same simple rule, as in hens, that is allowing six square feet per bird, is applicable. A plain square inside for the house will suffice, the rows of nests being located along the back wall, on the floor, each nest made one and a half feet long, by one foot high and fourteen inches wide.

Mature ducks, kept for breeding, should be apportioned, five females to one drake. They may be fed soft food, in fact, at no time do they do well on whole grain diet, unless this is accompanied by soft foods. A ration may be made of one part crushed oats, three parts wheat, and one part corn meal, mixed to a porridge. On alternate days, beef scraps, grit and green food should be mixed with the mash.

DUCKLINGS.—Hatching duck eggs—twenty-eight days are required—nearly always results in more fertile eggs and better average returns than in hatching from any other eggs. If ordinary good judgment and care are used there will be little mortality among the ducklings. Twenty-four hours after hatching, give them a feed of fine grit, together with a supply of water. Follow with a ration of hard boiled eggs chopped fine, mixed with bread crumbs that have been soaked in milk and squeezed dry. Rolled oats alternately with the above may be given until the fourth day, feeding six or seven meals daily, but not any more at one time than the ducklings will clean up. When four days old, and until three weeks of age, a mash made of hulled oats, bran and corn meal may be given, interspersing same with meat meal, ground bone, charcoal, grit and greens, such as lettuce, onions, etc.

The same food, with a slight change, such as rearranging the quantities of the different ingredients of which it is composed, can be given ducks until eight to ten weeks old, when they should be ready for market. Do not forget to always have fresh water before the ducks. The instructions with reference to killing and plucking, given in another chapter, are applicable for ducks.

CHAPTER XXIX.

HOW I WOULD START.

IN writing this chapter it is desired to discuss concrete cases and to take up the position of the individual person just as he finds himself located. Our contention is that the surroundings of every farmer are adaptable to successful poultry raising provided proper use is made of existent conditions.

Suppose then, first, the case of a farmer situated in Western Canada, whether he is a rancher, a wheat grower or a general farmer, who has decided to make poultry a department of his farm. He has purchased an incubator and brooder. He has no other accessory. There are no poultry buildings on his premises, and he has no poultry stock, therefore no eggs.

RUNNING THE INCUBATOR.

The first step is to decide that there is a proper place in which to operate the incubator. The main requisite is a clean, airy room, unheated, where the temperature will not be too variable. The room should not register a temperature higher than 60 degrees, and there should be a regular method of ventilation, without draft, so that a constant supply of pure, fresh air is assured.

Now, about the eggs, it will be necessary to purchase these, either from a neighbor who is already in poultry, or from some reliable breeder. Do not wait until ready to set the incubator, and then buy a lot of eggs promiscuously. Do not be satisfied either to buy ordinary store eggs: store eggs cannot be depended upon as suited for successful hatching.

HOW I WOULD START



Market Poultry in Storage.

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They may not be fertile, or even, if fertile, not hatchable.

Secure eggs from a reliable source, because a great deal depends upon the quality of the eggs.

Meanwhile familiarize yourself with the mechanism of the incubator, and have the machine in readiness, so that when the eggs arrive no time will be lost.

Operate according to the printed directions issued with the incubator. These instructions are simple, and must be carefully followed.

While the hatch is in progress examine the brooder. Open it up and familiarize yourself with its different features, and see that there is nothing missing. Set the brooder going and give it a thorough test.

BROODING.

If hatching in the early spring it will be necessary to run the brooder under a shelter. If a warm outbuilding is available, set the brooder in there. In the later spring the brooder will be left outside, and also through the summer months. While upon the question of securing proper shelter for the brooder, we may make mention of the Colony House as illustrated on page 83 of this book. Such a house is the next step for the chicks after the brooder. One may construct the house, if lumber is plentiful, as per designs shown, or Colony Houses may be purchased at a reasonable cost.

The Colony House question should be decided while the incubator is taking off the first hatch, or even before, and provision made either for the purchase, or the erection, of one of these. The brooder may be set inside the Colony House and then a twofold purpose is served.

HOW I WOULD START

At the end of three weeks, if the brooder is again required to care for the next incubator lot of chicks the machine is all ready, and the Colony House will afford ideal shelter for the first lot, which should now be thrifty and able to look after themselves pretty well.

Chapters are given setting forth brooding operations, and the rearing of the chicks, and we would refer the reader to these.

Spring passes, hatching is discontinued, and summer arrives. If proper attention and care have been devoted to the chicks the month of August should find the farmer with about four hundred and fifty head of nice sized stock, that is figuring that three hatches have been taken off, and there has been a loss of ten per cent. in raising the chicks.

TEMPORARY FAILURE.

Now, on the other hand, supposing that on account of any one of very many different reasons, the farmer whom we are discussing is not in the favorable position above described, what is he to do? Give up the business disappointed and discouraged? No, if because of poor eggs, indifferent management, or even some defect in his especial incubator, or because of loss in rearing through over-feeding, exposure, disease, or enemies, such as hawks, mice, rats, coyotes or other animals of prey, because of any one or two, or more, of the foregoing reasons, the farmer has not succeeded as he expected, he must not be discouraged, or consider for a moment the idea of discontinuing the work of poultry raising.

Let him look around during the summer and secure a nice pen of young stock. Dispersion sales are held at all the large poultry plants

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and some rare opportunities for the procuring of excellent stock at very reasonable prices are offered. This pen would be in good condition by fall and ready to give winter eggs.

A poultry building similar to that described on page 32, and the pages following, should be erected for their proper housing. Read the chapter on poultry house construction carefully because it contains many useful suggestions which can be incorporated in the erection of a new building, or the improvement of an old one.

THE SUCCESSFUL MAN.

Let us again take up the case of the farmer who has made a success of his first venture into poultry raising—as everyone should—and who coming on fall has a flock of over four hundred chickens. Of course when we say four hundred, there is no especial significance of these particular figures. The number may be five hundred, or six hundred, or two hundred, or one hundred, but the point we wish to make is that it should now be decided how many birds, from the whole flock, will be kept over during the winter. Our suggestion is not to have less than fifty, and not more than one hundred—for the first winter. Select the best of the pullets and a sufficient number of vigorous cockerels—one cockerel to every ten hens—and count on them as the breeders. The remainder should be fattened and marketed to the best advantage as per suggestions offered in another chapter in this book upon the subject.

So the fall arrives, both the men whom we have described, are actively in the poultry business, both starting with equal chances prac-

HOW I WOULD START



The South-eastern Side of Poultry Yards of Canada, Ltd., Plant.

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tically. The winter should find them both with healthy, active birds, and an ample supply of fresh eggs throughout the season. One cannot be too emphatic, however, in regard to the absolute necessity of giving the breeding stock every care and attention, and proper feed. This is essential to success; these are the factors which count. Under care and feed of parent stock we set forth full directions.

THE OTHER FARMER.

Throughout the length and breadth of Canada, but principally in the older provinces, are any number of farmers who are, and have been for years, keeping poultry haphazardly, treating the hens with contempt, seeing no good in them, giving them no care and having no system whatever about their management. These farmers have never found poultry profitable—how under those circumstances could they expect it to prove profitable?

Take the case, however, of one more fortunate individual than the others. Through some good influence, he has at last purchased an incubator and brooder. At this point we meet him. It is the spring of the year, and hatching time. He must make provision for a proper place in which to operate the incubator, as per instructions already set forth.

Now about eggs. If his birds are properly mated up, he might try one hatch with eggs from them. But it would be well for him to make provision for the securing of at least one incubator lot of eggs from some outside reliable breeder. If not an incubator lot, at least a couple of settings, and in this way there would be produced the foundation stock for the next winter's breeders.

HOW I WOULD START

Let the particular farmer whom we are discussing take upon himself the suggestions offered in regard to brooding, colony house and poultry building. He has, we suppose, now determined to earnestly and conscientiously endeavor to make a success of his poultry, and he can do so if he will follow the Peerless Way, as its steps are set forth in this book.

THE SMALL POULTRY RAISER.

There is still another man who wants to take up poultry raising—the man who is resident in the city or town, or in the suburbs, and whose principal difficulty—if the condition we are about to mention may be so termed—is lack of room. The land at his disposal which he could devote to poultry is limited. His enthusiasm and his energy are very seldom limited, in fact there is a surplus of both in the majority of cases, and it therefore behooves our friend to exercise care and judgment. Let him not be too ambitious, nor try to grow beyond his natural bounds in one year, as for instance to endeavor to run a one 'housand hen plant on a half-acre of ground. Such ideas are rash, and impossible, and inevitably result in disappointment and discouragement.

The "city man"—we use the term for want of a more appropriate one—who already keeps a few hens will no doubt be conversant with the laws pertaining to the general health and welfare of his stock. He has made some progress, and he wants to expand. Let him do so judiciously, by first giving attention to his poultry work, and arranging a suitable house for the birds, a proper place in which to operate the incubator, and clean quarters for the chickens in the rearing.

THE PEERLESS WAY

The procurement of an incubator and brooder—small sized machines—is the surest, most economical and satisfactory manner for the poultryman under discussion to further develop his plant. He should devote time and attention to superior marketing because he has the opportunity of developing special markets for his product. He can get the highest class of trade without any difficulty because of the ever increasing demand for superior poultry produce.

Now, about the man who lives in town, or in the suburbs, and who has never kept hens, but who wants to get into practical poultry raising, either because of a desire to make more money, or because of a fondness which he has for "chickens and things," first, we would say to that man you must regard poultry raising as more than a play. You must be serious and treat your poultry work just as any business wherein are the possibilities of profitable enjoyment. You must be prepared to devote to your poultry the time and attention upon which its success to a great extent depends.

A start may be made either with eggs, or with stock. As previously stated in this book we cannot advise definitely whether it were better to start in the spring with the incubator and eggs, or by the procuring of a pen of birds in the fall. The especial circumstances surrounding one's particular case are what should govern. However, we feel that with the instructions already set forth throughout the chapters of the Peerless Way, one could decide for himself and enter upon the work with accuracy, and practical certainty of success.

CHAPTER XXX.

PRACTICAL POULTRYING IS PROFITABLE

BY MISSES L. AND E. NICHOLSON.
New Glasgow, Que.

From the testimonials of the thousands of users of the Peerless Way throughout the Dominion of Canada, we have selected for publication here because of its simplicity, and because of the practical information which it contains, and because of the lesson it teaches, the following, written by two young ladies. Two sisters, daughters of a clergyman, they themselves carry on a partnership business in practical poultrying. Success has crowned their efforts; a study of their experience is most instructive.—THE EDITORS.

HATS off to the little hen! Why? Because she is the greatest money maker, the dearest pet, and the most intelligent friend. If our readers



She is Worth Her Weight in Gold.

who keep hens will take a little notice of their birds, notice will soon change to interest. This we discovered when four years

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ago a friend gave us one hen and eight tiny chicks. At that time we had never handled a chicken or hen, and did not know if they should be fed on lamb and green peas or bread and milk. For two years we kept thirty hens, then in the spring of 1908 we decided we would make poultry our aim instead of any other business or profession, and here for the encouragement of any who try we will say that we started two years ago with thirty-five hens and scrubs of the lowest order,—and this winter will have the finest pure bred stock, including stock from the best Barred Rock in Canada, without having spent one cent from any other source on our business.

We are the daughters of the clergyman of this parish and had to entirely remodel dirty unkept stables and sheds into model poultry houses, and the little hen has paid all her own bills, and is now not alone paying her own, but our bills also.

Many readers will ask how did you succeed? Here is where our success lies. Perfect cleanliness, patience, proper method and system and study, and last but by no means least, a real love for our birds. They know us; we are their friends. They will pose for us, fly on our heads and shoulders; we can pick them up at any time. What a lot of work and fuss! we hear our readers say. If you are a lazy man don't try poultry, or anything else worth while. You will not succeed. We saw and hammer, do all our fencing for pens, etc. We are ready for any emergency, have to be, for we cannot obtain help, except at quite a high price and then very rarely. We had all the discouragements it would be possible to meet, starting with a scrub stock. We had every ailment that

PRACTICAL POULTRYING IS PROFITABLE

the feathered world is heir to, to contend with. During the summer of 1908 we lost more than half of our chickens. For convenience we kept a tin box, which we called the chick coffin, and into this we would drop our dead chicks as we found them during the day, and each night we would have a burial of them till we were tired of the sight of dead chicks. How could we raise good healthy chicks from weak scrubby hens? It was then we decided we would go in for the best of the best in beauty and utility,—the Barred Plymouth Rock.

Three years ago we purchased our first settings, and this year we purchased stock and eggs from the best Barred Rock breeds in Canada. Our own orders for hatching eggs were so many that we found it almost impossible to fill them all. Some customers are already arranging for hatching eggs from us for 1911. We have heard from customers who got as high as 90 per cent., and every one agrees that they hatch the finest and strongest chicks from our pens, and here let us advise the purchasing of a good reliable Incubator; it is folly to use the time of a large number of hens, for hatching, when this work can be done easier and cheaper with an Incubator. For the beginner a simple machine is needed, and you cannot beat the Peerless. We have found it an especially good Incubator. Strong, healthy hens are the foundations of how we raise 98 per cent. of chicks hatched. They are hatched from hens who have never known one day's sickness,—we never use a bird for breeding who has ever shown any sign of even quietness.

One reason for failure of beginners is that, they begin on the chicks, when really the chick hatched is half way through the business.

THE PEEBLES WAY

You must look to your breeders; they must be good pure bred birds, in perfect health, always on the move, and when they do sit down under bushes, or in some shady place for a rest, let them rest; don't keep cats and dogs that will be forever chasing among them so they fly in all directions. We would go far out of our way so as not to disturb our birds.

Now we said before that when we started four years ago we did not even know what to feed, but not so to-day. When our chicks are hatched they are strong and healthy. The parent birds were subjected to the most rigorous weather, so the chicks are able for the same. We place our chicks in Brooders, not more than fifty in a large Brooder. Don't crowd—if you do your chickens will die. We start with a temperature of 90, and after three days gradually drop to 80; we give no food for almost fifty hours from time of hatching. After that they get water, chick food and oatmeal for two days. Oyster shell, grit and charcoal are ready for them, and from then on they are never without these. The commercial chick foods are the very best to use as the foundation food. All the others can be given as we eat cake and jam.

We let our chicks out on the grass at three days of age into wire runs made from the Brooder. If your coops are visited by hawks, we would suggest adopting our arrangement to fight the hawk, which arrangement we have found very valuable. Over the runs for chicks, from the time they go into the Brooder, and after when placed in colony coops, we lace string. Drive a stick into the ground in the centre of the run and fasten the string to the wire, then bringing it to the stick to and fro, it makes a

PRACTICAL POULTRYING IS PROFITABLE

fine cage which will keep Mr. Hawk at a good distance. For rats a good faithful dog, and some cats trained to the chicks are best. We have a faithful dog who chases hawks, and is death to everything that would hurt the fowls. Our cats have been trained to go round the Brooders, and sleep in the chicken and poultry houses at night consequently, we never see a rat.

Lice are the worst pest fowl must contend with. If on the birds the eggs will soon grow less. We have not, we can safely say, had one louse on our chicks. Our hens are carefully looked after and roosts whitewashed every three weeks and painted with disinfectant. Our brooders and coops are perfectly free from them. They are scrubbed after each brood is taken out, and left open to the sun for a day before filling again. They are cleaned out every day and the floors covered with sand. The seams are painted every week with disinfectant; we keep up an endless war against lice.

It may be interesting to know some of the mistakes made by us, which cost us endless loss and trouble. Two years ago we decided to use a granary as a poultry house. It is a splendid building with a fine hardwood floor. First we stopped up all the cracks, lined it with ready roofing, put up a double door, nailed up the windows. Whenever we went in, or out, we did so through as small a space as possible so as not to admit cold air. Needless to say although our hens laid fairly well, we had no end of sickness. We tried every possible means to overcome it. We had a post-mortem on many that died, but by careful watching we found in every case it was liver trouble, but could not

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find the cause and only did so in time for last winter. So we took off our double door, put in more windows, and kept one large window open all winter, and although the temperature went as low as 25 below zero we never had a frozen comb, or a sick hen from June, 1909, to date of writing, that is August 29th, 1910.

We believe that indigestion and liver trouble are responsible for half the deaths among poultry; we intend keeping more windows open this winter (closed at night).

Our poultry houses are kept perfectly clean, so clean that people come to see them as often as they come to see our birds. We whitewash twice a year, sweep the houses every morning, in winter keep a deep litter of straw on the floors, which is never allowed to get the least bit damp. We always use disinfectant.

We believe in plenty of fresh air, grit, oyster shell, charcoal, pure water in clean dishes, regular feeding, plenty of clean litter in winter, plenty of sand baths summer and winter, for as the old proverb says one ounce of prevention is worth a pound of cure, only in this case it is ten pounds not one. If we could have our readers for a very short time amongst our birds, we would most certainly make them the hens' admirers. More some other time; meantime wishing all success.



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